



BUSINESS TECHNOLOGY LEADERSHIP

I.T. GOVERNANCE

It's not about processes; it's about recruiting the right people

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**THE MID-MARKET
SUPPLY CHAIN**

Mitigating the risks and leveraging the efficiencies of hosted software

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STAFFING CRISIS

How to Hook the Talent You Need

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The pool is shallow.
The competition is fierce.

BY STEPHANIE OVERBY

The IBM logo is positioned in the upper left corner of the advertisement. It consists of the letters "IBM" in a bold, sans-serif font, with a registered trademark symbol (®) to the right. The logo is white and stands out against the dark background of the server racks.

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Columns

METRICS IT projects are usually judged successes or failures when they go live. But look back and you will see the real judgment comes later—and that requires a new set of value criteria. **By R. Ryan Nelson**

GOVERNANCE Good IT governance is not about committees, processes, forms and procedures. It's about involving as many people as possible. And then it's IT's job to support them. **By Lynne H. Vogel**

I.T. VALUE How CIOs can engineer a “tipping point” to speed up adoption of value management practices and prove—once and for all—that IT matters. **By Susan Cramm**

more »

COVER STORY | STAFFING Things to do today and tomorrow to keep your evolving IT department stocked with the best and most useful employees. **By Stephanie Overby**

SECURITY Where do the boundaries between IT and security begin and end? Who's responsible for what? How do you decide? When it works, the relationship between CIO and CSO can be a beautiful thing.

MID-MARKET Supply chain software has been considered too risky and important to be hosted by outsiders. That is, until you consider the risks and expense of installing and supporting it yourself. **By Meridith Levinson**



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CIO Online

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[SURVEY IN DEPTH]

Fishing for Talent

For the second year in a row, a majority of IT leaders—two-thirds, in fact—say their staffs are stretched too thin, according to CIO's "2006 Midyear IT Staffing Update." Read the overview to find out what CIOs are doing to retain and motivate employees in the face of a looming talent shortage. Then download the full report to drill into the details.

» www.cio.com/090106

[BLOGS]

I'M FROM I.T. AND I'M HERE TO HELP

Whatever happened to common courtesy? Open-source pundit Bernard Golden describes a disturbing conversation and its implications for open source.

blogs.cio.com/node/392

REAL-TIME WAR VS. REAL-TIME BUSINESS

Mike Hugos moves beyond the sometimes flippant war analogies used in business every day and looks for real lessons that combat can teach corporations—while expressing a hope that the skills learned in war might soon be turned to more constructive pursuits.

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MAKE YOUR POINT

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A large, close-up photograph of a man in a dark suit and white shirt, looking directly at the camera with a serious, thoughtful expression. His hand is resting on his chin. Behind him, two small devils in red suits and black hats stand on either side. The devil on the left has a speech bubble that says "lose money", and the devil on the right has a speech bubble that says "lose customers". Both devils are holding pitchforks.

lose money

lose customers

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Our Story

IT is changing and therefore the story our magazine tells is changing too

Good magazines, successful magazines, no matter what their ostensible subject, are driven by an underlying theme, a meta-story. Without that conceptual foundation, a magazine becomes a mere collection of articles, an anthology rather than a novel.

In the '50s, *Playboy's* meta-story was the loosening hold of Puritanism on America. In the '60s, *Rolling Stone's* theme was youthful rebellion against aging authority. The booming economy of the '80s inspired *Esquire* to infuse consumption with sophistication, while *Inc.* celebrated the rise of the entrepreneur. In the early days of the Internet, magazines like *Wired* and *Fast Company* and *Industry Standard* were all about revolution. Anything new was, by definition, good; everything old was simply...hopeless.

These themes informed every article those magazines ran, dictated their design and determined their presentation. The magazine's success depended on how well its meta-story reflected its readers' dreams and realities.

But as times change, so must the meta-story. If it doesn't, the publication becomes irrelevant. To wit, *Playboy* is no longer a cultural leader; *Industry Standard* is just a lingering memory on the Web.

CIO, thankfully, is still here because it always has been designed to reflect its readers' reality. Consequently, our meta-story has gone through several changes.

In the beginning, when the CIO role was new, our meta-story was about gaining respect. CIOs were trying to change their image from the guy who fixed the computers to a C-level executive with broad enterprise responsibilities. Accordingly, we celebrated CIO accomplishments; we cheered each and every success, even when they were (frankly) pretty small.

When the Internet bubble burst, our meta-story changed. We emphasized running IT like a business. We ran articles about communicating IT value, about how to cut costs. We warned CIOs against complacency; we argued for managerial rigor.

Today, the story has changed again. Computing is moving from the enterprise server and the desktop to the Web; applications are turning into services; and the nature of the CIO's job is moving from a technology role to a business function even as the IT department morphs from a reactive provider of services to a proactive driver of top-line growth. Our new meta-story is about transformation.

To that end, this issue's cover story is "How to Hook the Talent You Need" (Page 40) by Senior Editor Stephanie Overby. It describes the changes IT is undergoing, and it tells you five things you can do today and five things you can do tomorrow to hire the enterprise architects, business analysts, developers of services and managers of business processes that this new paradigm, this new story, demands.

Our success is based on how well we reflect your reality, so let us know how we're doing. We want to be around the next time your story changes. And it will.

David Rosenbaum, Managing Editor
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FROM THE PUBLISHER

Can You Hear Me Now?

Your most important communication tool is on your desk



Recently, I've been asking CIOs this question: What's your most powerful communications device?

Most select their e-mail-enabled cell phones. Some choose their desktop or notebook computers. But those answers, in my opinion, reflect how much the device is used, not its power.

For me, the good old-fashioned office telephone is the champ. And it's bound to get even more powerful as VoIP-enabled phones begin to proliferate.

CIOs who disagree with me (and most do) point to their cell phone's agility and flexibility. On that, I've gotta agree. It's hard to attach a desktop phone to your hip or bring it in your car. And, granted, the cell phone does do a good job of helping us keep in touch. Calls made on office phones, however, allow for a fuller exchange of ideas. You talk longer because the sound quality is vastly superior. When was the last time you had to ask, "Can you hear me now?" from an office phone?

Not convinced?

Answer me this: If you had the chance to close a million-dollar deal, and you had a choice, would you use your cell phone or your office phone?

Convinced now?

So make a list each Monday morning of five people—employees doing great work, important partners, key prospects—and write down each person's telephone number. Vow by Friday to call each one, leveraging the power of your office phone.

CIOs claim that good communication is the key to their success. Try using your office phone more. I guarantee you it will increase the power of your calls.

Gary Beach, Publisher
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trendlines

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NEW * HOT * UNEXPECTED

Katrina Plus One: Disaster Plans Stress Communication

DISASTER RECOVERY A year has passed, but Aug. 29, 2005, remains a fresh memory for Mississippi Power CIO Aline Ward: As Hurricane Katrina slammed the Gulf Coast, Ward scrambled to keep communication lines open from a command center in the utility's Gulfport plant. Because this storm center was located several miles inland, Ward thought equipment would be safe from flooding. "We were on the second floor, but soon the water started to rise and come inside the building," recalls Ward. Working in the dark, Ward and her IT colleagues piled sandbags against the door and bailed water from the room to keep radio communications equipment up and running.

The result? Ward kept one radio system running throughout the storm and its aftermath, while her IT department worked through the night and logged 18-hour days for more than a week after the storm to help restore power to 195,000 customers who could safely receive it in 23 counties throughout southeastern Mississippi. Many of the employees—including Ward—lost their homes to Katrina. "The personal side was huge," Ward says, noting that many employees still don't have homes and that all corporate offices remain located in trailers or one of five temporary buildings, all of which IT had to quickly equip.

Continued on Page 16

Cheaper Chips Through the Power of Light

MICROPROCESSORS

Could ultraviolet light lead to lower-cost microprocessors and then to lower-cost PCs? It might, if a U.K. research project pans out. Researchers at University College, London, have found a way to use UV light instead of energy-hungry blast furnaces to create the important silicon dioxide insulation layer on PC chips.

Creating a film of silicon dioxide on silicon wafers is an important stage in chip manufacturing: This film serves as the insulating layer into which chipmakers etch electrical circuits, among other functions. Chipmakers today bake silicon wafers in furnaces at up to 1,000 degrees centigrade to construct this silicon dioxide layer quickly.

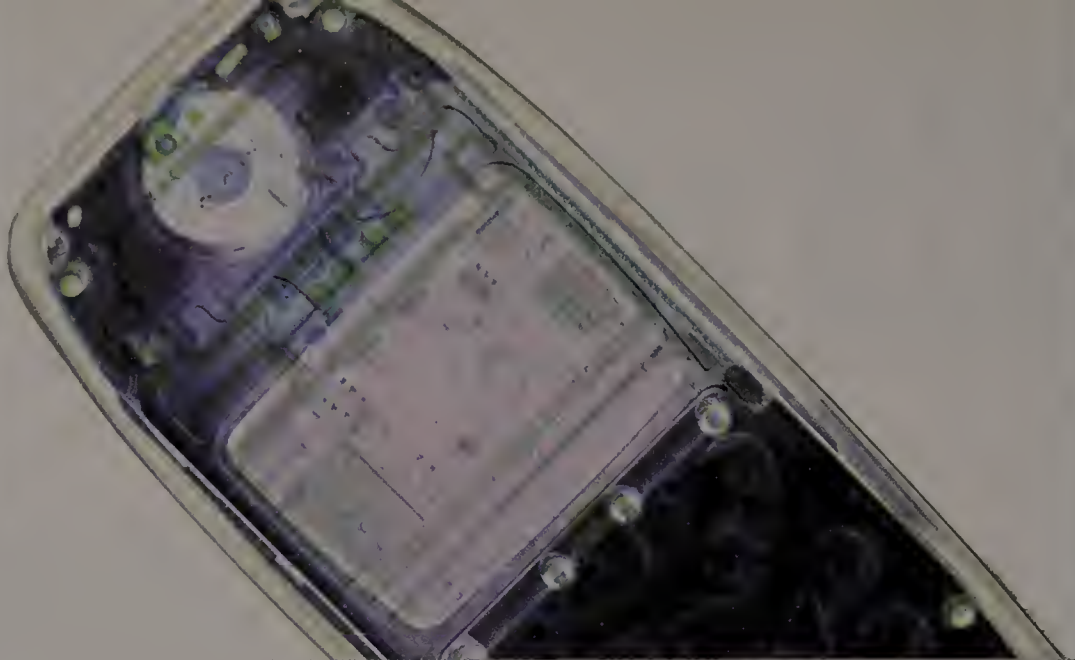
The U.K. researchers have

made the process work by using energy-efficient UV lamps, providing a cleaner and significantly less expensive solution. Set to the right wavelengths, UV lamps can create the silicon dioxide layer at room temperature, the researchers say.

Much testing remains, so it could be several years before the technology is ready for commercial use,

says Ian Boyd, the project leader and chair of electronic materials at the university's Department of Electronic and Electrical Engineering. Some chip manufacturers have expressed interest in the research work, Boyd says, but chipmakers are famously conservative about making changes to their manufacturing processes.

—James Niccolai



First Phishing, Now Vishing

SECURITY Now that identity thieves have almost perfected phishing, they've moved on to "vishing": Scammers are using voice-over-IP (VoIP) telephone numbers to trick people into revealing credit card and bank information, says Paul Henry, vice president at Secure Computing. The Internet security software maker has seen just four vishing scams to date, but expects the practice to "explode," Henry says.

In phishing schemes, scammers send e-mail that looks like it comes from a bank, credit card company or PayPal. The e-mail typically says the recipient's account has been compromised and needs information confirmed, and includes a link to an official-looking site. In "vishing," identity thieves ask people to call a phone number attached to a VoIP account. Such accounts can be obtained easily online through services like Skype or retailers such as Vonage reselling VoIP products, Henry says.

In one vishing case, scammers targeted PayPal users by including a telephone number in an e-mail. In another case, criminals used an automatic dialer to call potential victims and play a recording that warned of fraudulent credit card activity. The recording asked people to call a number (with a spoofed caller ID) and confirm personal data.

Unfortunately, at this point there's not much CIOs can do to protect their companies' employees and customers from being vished, Henry says. It would be smart to alert your company's employees and your call center reps who interact with customers to the vishing trend, though. Reps can instruct customers to hang up on a suspicious automated call and instead call the number listed on the credit card or bank statement.

—Grant Gross

Katrina

Continued from Page 15

The most important lesson Ward learned during Katrina: Communication with employees is critical to getting an IT department and a company back on its feet. Before the storm, her department owned five satellite phones (important in disaster situations since cell phones often don't work); but they were older models, and proved to be heavy and cumbersome to use. For a period of several days following Katrina, for example, Ward talked with her employees via radio communications. Now the company, which is a unit of Southern Co., owns 74 new, smaller satellite phones assigned to key locations.

Before Katrina hit, Mississippi Power had installed an extensive, self-healing fiber ring network, which the company owns and maintains itself, to ensure that operations centers like the storm center get access to critical applications. When individual fiber routes failed during Katrina, the network was able to reroute data and continue working. After the storm, Ward's team added microwave systems, similar to satellite dishes, so the company is not dependent on leased telecommunications landlines from Bell South for voice communications during a storm. At the command center, she's added waterproof walls and raised equipment off the ground.

Ingenuity also plays a part in any disaster recovery, Ward now recognizes. At Mississippi Power's corporate headquarters near the beach, a key generator sank under water just after the storm hit. Linemen worked to place a large electrical cable from a portable generator up to the seventh floor data center in order to restore power at the company's telecom hub for voice and data.

Ward says she feels better prepared now to help her company survive a similar storm. In addition, she is working to upgrade software that tracks employees and power-restoration resources in the event of disaster. "We're still looking at everything from a worst-case scenario," Ward says. "From the IT side, I feel much better prepared than pre-Katrina."

—Susannah Patton

Gotta Have a Blog

35% of large companies plan to launch, upgrade or replace weblog authoring systems in 2006.

34% already publish internal or external blogs.

SOURCE: JupiterResearch survey of 251 companies with \$50 million or more in revenue

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Computer Education's **F**ailing Grade

EDUCATION CIOs who haven't thought about ways to help improve computer science education in U.S. high schools could soon be in for a rude awakening. A recent study by the Computer Science Teachers' Association (CSTA) reveals a host of problems plaguing technology education at the K-12 level, which could lead to a critical shortage of IT professionals starting in 2012 and to limited career opportunities for today's students.

Only a quarter of U.S. high schools have a computer science requirement, the CSTA reports. Computer science teachers lack time for training and struggle for resources. Female and minority students are underrepresented in these courses. And students struggle to add computer science to their packed schedules.

The National Science Foundation created the CSTA last fall to support teachers. For example, the CSTA examined other countries that have tackled computer education woes, then created a model curricu-

lum and implementation advice.

CSTA also works with policymakers and teenagers, hoping to increase student interest and ensure smart spending of computer science education funds. The key with students, says CSTA executive director Chris Stephenson, is stressing the connection between their interests, like health care or the environment, and computer science classes offered in their schools.

CIOs can help by lobbying state and local policymakers and by speaking at schools about job opportunities, Stephenson says.

CIOs can also encourage their employers to invest in education initiatives. "There's a real ROI to that," Stephenson says. "We're the start of the pipeline. If you don't get engaged at this level, you're not going to have the workers that you need to remain innovative." (For more about how forward-thinking CIOs are approaching education, see "How to Hook the Talent You Need," Page 40.)

—Stephanie Overby

High School Computer Science Report Card

89% of computer science teachers feel isolated and lack support from school administrators.

74% of high schools don't require students to take computer science.

Only **40%** offer an advanced placement (college-level) computer science course.

SOURCE: "The New Educational Imperative: Improving High School Computer Science Education," CSTA

Mapping for IT Success

STRATEGIC PLANNING Few travelers would attempt a drive somewhere new without a road map. An exponentially simpler version of what a driver will see, a map provides touch stones of what's important to navigation.

Similarly, a strategic road map distills what can be the complicated landscape of an organization's business strategy into a one-page graphic. It answers three questions: Where are we now? Where do we want to go? How do we get there?

Strategic road maps can be particularly useful to an IT group, since developing one requires alignment with business goals and a common language, says Robert Phaal, professor at the Centre for Technology at the University of Cambridge. Phaal, who has worked with a wide range of companies to develop strategic road

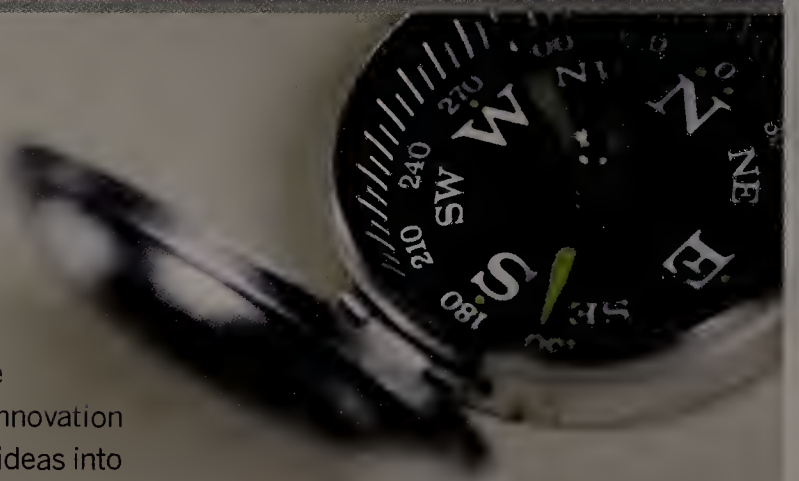
maps, says that because road-mapping principles are generic, they can be adapted to any type of company or strategy. They are especially useful in supporting innovation because they translate abstract ideas into something more concrete.

For example, a company that makes display technology uses a road map to illustrate how technologies in the R&D phase are forecasted to progress by showing how they could be used by various products, first for a watch face, then for cell phones and finally for a computer display. Next to a picture of each product is two short lines about its technological features and a few more about its market implications. The display technology road map translates highly technical information into simple visuals and text that leaders outside the

IT group can understand.

That simplicity is deceptive, Phaal says. Representatives from across the enterprise must meet and develop the one-page view of business strategy, then synthesize their partial views into a holistic one. Creating the road map also points out gaps in the strategy or ways a project may become a dead end. For these reasons, Phaal says, "Many find the process of road-mapping even more valuable than the road map itself."

—Diann Daniel



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WIRELESS It's the frustrating part of going out for dinner: Your waiter seems to have eyes for everyone but you. Trying to zap this annoyance, Fatz Cafe, a restaurant chain based in South Carolina, is deploying wireless technology to let patrons electronically communicate with their servers.

Fatz Cafe has implemented the technology at one restaurant and has signed a contract with ESP Systems to install it enterprisewide at 32 locations. Steve Bruce, president and CEO of Fatz Cafe, says the technology has helped turn more tables and boost customer service.

"It's still in its infancy, but it addresses our needs more than anything I've seen," says Bruce.

Here's how it works: Each server, host and manager wears a watch that is connected wirelessly to a hub at each table. After the hostess seats a party, a server greets the diners and hands them a disc that is about 2.5 inches in diameter. Once the customer pops the disc into the table's wireless hub, he or she can click down on the disc to ping the server's watch and get attention. From a managerial standpoint, the technology helps supervisors see which tables need help and shift manpower quickly, says Devin Green, CEO of ESP Systems. For example, if a server is dealing with multiple tables on a busy night, the system catalogs the requests in the order they were received. If the waitstaff is overwhelmed, the requests can be forwarded to a manager, who can help out or redistribute personnel within seconds. Fatz Cafe's waiters have warmed to the idea, Bruce says.

"With servers, you get a little apprehension at first and some skepticism," he says. "But once they saw how much it helped them, they were very accepting of the equipment."

—C.G. Lynch

Smarter IT Service Delivery

MANAGEMENT REPORT If you think your IT department delivers good service, think again. According to a recent paper by consultancy Macehiter Ward-Dutton, few organizations are able to run IT efficiently while being responsive to business needs.

Tight IT budgets have forced CIOs to do more with less, says the paper's author, Jon Collins, principal analyst with the U.K.-based company. "But efficiency doesn't actually benefit the business, apart from saving money on the IT budget," Collins argues. Rather, he says, service delivery also has to be effective, meaning it must provide tangible business benefits.

The reason why it often doesn't: There's a divide between the application development side of the IT shop and the group responsible for operations and maintenance. Developers build new systems without much input from the systems administrators who later have to run them. A holistic view of IT service delivery would take into account the requirements of business processes on IT infrastructure and applications and incorporate that information into IT project decisions.

"I don't believe there's this kind of nirvana when everything will work beautifully together, but organizations can work a lot better," Collins says.

He suggests a path to achieving IT service management maturity that is similar to models for good software development. As with software, the key to IT service maturity is establishing repeatable processes. Companies may begin without specific processes for managing IT service delivery. Along the path to maturity, IT organizations define formal processes and service-level agreements with business users. At the most sophisticated level, IT adjusts its service delivery continually, according to business demands.

For example, an IT shop at a bank might support a set of call center applications. If the bank wants to add mortgages to the products it supports through its call center, the IT department needs to be flexible enough to quickly update the call center applications and adjust how it supports those apps going forward.

To get started, Collins recommends CIOs build a business case for investing in the resources necessary to improve service delivery: CIOs will need to identify the most important services that IT provides the business, investigate how to improve these services, and determine the related costs for technology, staff resources and training.

—Elana Varon

Effective IT service delivery provides tangible business results.

Bank of New York Makes CIO Innovation Chief

ON THE MOVE In June, The Bank of New York tapped its CIO, **Kurt Woetzel**, to lead a new Office of Innovation. Woetzel says the investment bank's executive team (of which he is a member) created the new organization to accelerate top-line revenue growth by creating a constant stream of new products and customer services. "The Office of Innovation will bring together resources for generating new ideas, validating new business opportunities and bringing those opportunities to fruition very quickly," says Woetzel.

A 21-year veteran of The Bank of New York, Woetzel already knows the business, the customers and the internal employees to make things happen. He once served as a division head of the \$8.3 billion bank's

broker-dealer services business. His CIO experience, he says, provides an additional benefit. "I have a great perch that allows me to look across all of our business on an enterprise level and see opportunities at the seams of our businesses that others don't," says Woetzel.

Although The Bank of New York is not alone in establishing an internal group chartered with innovation (Computer Sciences Corp., AMD and Citigroup have also done so in the past 18 months), its appointment of the CIO to lead the effort is unusual, says James P. Andrew, a senior VP within The Boston Consulting Group.



Kurt Woetzel

Because their peers still don't see them as business strategists, CIOs aren't typically put in charge of innovation, he says. Usually, companies appoint a chief innovation officer—"the other CIO," according to Andrew—who is someone who has a head for business, understands customers and can sell ideas with influence.

The attention to innovation is a reaction to companies exhausting disciplines such as Six Sigma for improving quality and productivity, says Andrew. "With the stock market increasingly rewarding growth, companies are realizing the importance of innovation and its ability to drive that growth," he says. —Meridith Levinson

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BY GALEN GRUMAN

KNOWLEDGE MANAGEMENT | Cliff Bell came to a somewhat shocking realization last year: The two most important Internet software applications in recent history—e-mail and Web browsers—were failing his company. Overwhelmed by e-mail and lacking the time and energy to surf the company's intranet for important information, employees simply weren't getting the information they needed to do their jobs. "People often don't check [an intranet] landing page," says Bell, who is CIO of Phoenix Technologies, a maker of electronics components for PC motherboards. "And if you send them an e-mail, it's not often read."

But Bell did notice that "blogs get traction." That led him to explore Really Simple Syndication (RSS), a new model for keeping employees, customers and business partners up to date, one that pushes relevant information to them via subscription rather than relying on their ability to find the information. For example, Phoenix's legal team uses RSS for legal review, mixing RSS subscriptions with internally generated feeds for specific projects. With RSS, the lawyers no longer have to trawl through e-mail or the intranet to find out what's going on with a particular project; they can rest assured that if something new happens, they will hear about it. The result is a common, instantaneous channel for legal staff to share information and add their own comments to it. Bell envisions the

use of departmental or project-based RSS feeds throughout the company, as well as a common corporate channel for companywide announcements.

Beyond the News

Best known as the delivery technology for many blogs and for content sites such as Yahoo and *USA Today*, RSS formats messages in XML for delivery over a network or the Internet to a reader—an e-mail program, Web browser or dedicated application—that displays the messages much like e-mail or a webpage. But RSS is based on a subscription approach, where

consider useful.

CIOs who are pushing the original definition of RSS are doing so in two primary ways: One is inside the enterprise, to create ad hoc groups that can subscribe to and comment on the same core information, whether for engineers working on a new design or HR staff analyzing the latest standards and regulations. The second method is to focus outside the enterprise by using RSS to deliver custom information that partners and customers subscribe to, such as the ongoing status of an order or transmitting current customer leads to distributors.

With RSS, the lawyers no longer have to trawl through e-mail or the intranet to find out what's going on with a particular project. If something new happens, they will hear about it.

recipients decide which message feeds they want delivered, and RSS includes filtering capabilities (for example, a subscriber may specify that only stories related to mergers and acquisitions in a legal newsletter should be sent) to keep received messages on target. It's that filtered, subscription approach that enterprises can take advantage of to create a communications channel that recipients

RSS Moves into the Enterprise

► To help CIOs keep up with **RSS** and other "new channel" technologies such as wikis and blogs, Burton Group analyst Peter O'Kelly publishes a blog devoted to the enterprise perspective. You can find it at www.burtongroup.com/research_consulting/doc.aspx?cid=11.

► When you're ready to deploy RSS inside the enterprise, two companies currently offer enterprise RSS server/feed management systems: NewsGator Technologies (www.newsgator.com) and KnowNow (www.knownow.com).

cio.com

The Inside Approach

Ross Szalay, IS director for the law firm Dykema, took the internal approach to turbocharge the firm's ability to monitor current cases. For example, an attorney in charge of a specific client account gets a regular feed of all specific efforts undertaken by other attorneys for the client, so there's a unified view of the services the client is getting—and needs to be billed for. "That billing attorney wants to see this status, but he does not want to sort through all the details in our case-management database," says Bill Gratsch, Dykema's Web technologies director.

Using RSS rather than e-mail updates works better for both the users and IT, notes Szalay. The RSS feeds automatically go into separate Microsoft Outlook folders, saving users the effort of identifying relevant messages in their general inbox. Because the RSS system sorts and filters the messages, Szalay's IT staff doesn't have to configure individual users' Out-

RSS: The Next Generation

The technologies aren't fully baked yet, but the recipes are coming together

While RSS is best known as a way to filter the vast world of the Web, most CIOs will want to manage the information they make available via RSS from behind their firewall so that outsiders can't pry into the innermost thoughts of the company. That need has prompted two companies—NewsGator and KnowNow—to develop enterprise RSS platforms to serve as in-house RSS aggregators so that CIOs can tailor internal and external RSS feeds to specific needs.

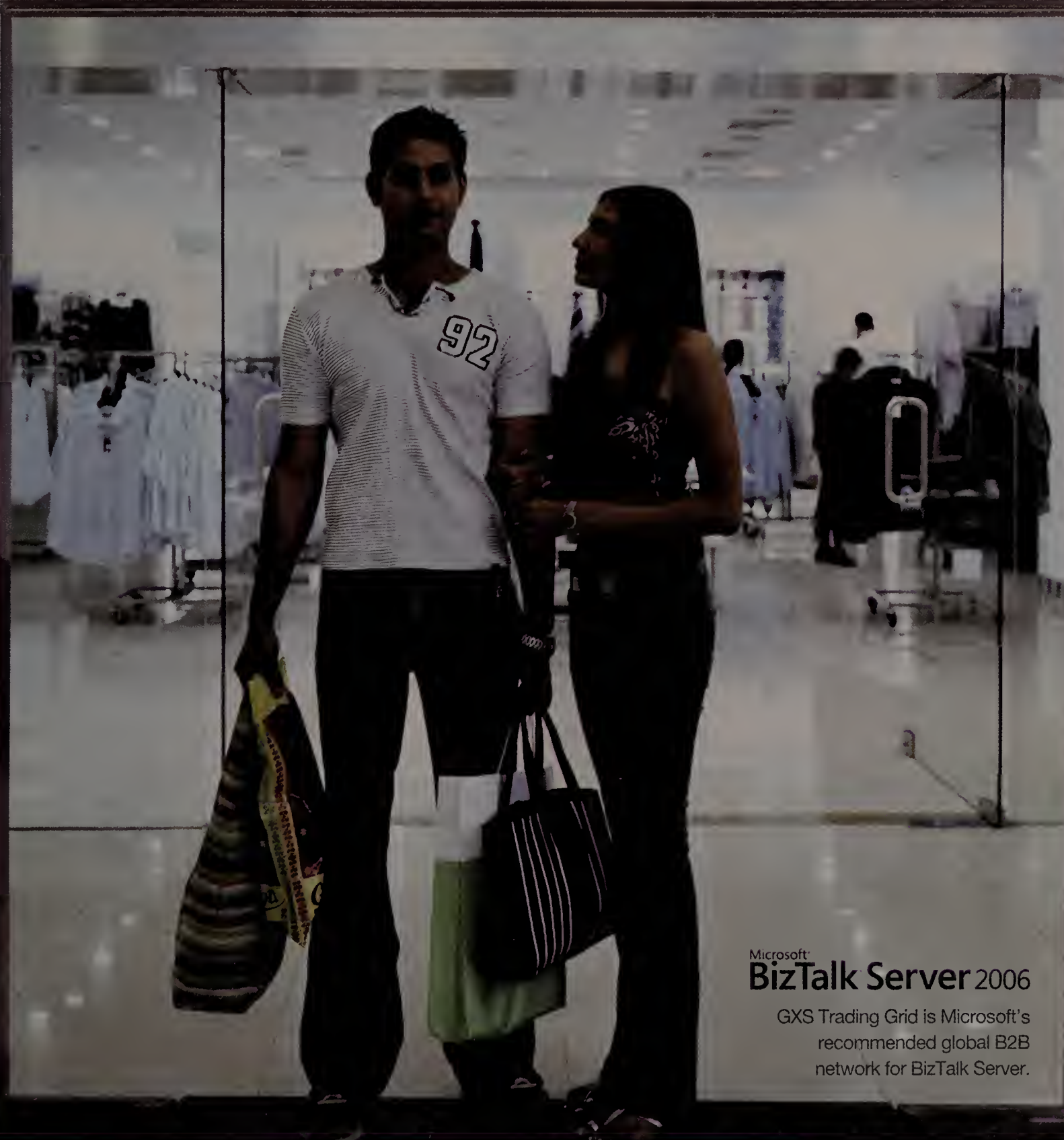
Uptake of RSS has been slow so far, however, because to access RSS feeds, users typically need to do a fair amount of configuring of standalone readers, their browser or an e-mail client. But in the next year, the major browser and e-mail client companies—Microsoft and Mozilla—will include native RSS support, so users can read and manage RSS feeds with minimal configuration. So will the next version of Microsoft Office, notes W. Gregory Dowling, senior analyst at JupiterResearch.

Meanwhile, enterprise application providers like SAP and Oracle already include program interfaces to support XML exports for use in RSS feeds—with the major portal providers soon to follow suit, notes Dan Keldsen, senior analyst at the Delphi Group consultancy. "More and more commercial vendors are RSS-enabling their applications," Keldsen says. And the increasing popularity of Web services—which also uses XML as a standard data format—makes it straightforward to generate RSS feeds from homegrown applications, he adds.

—G.G.

9

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look clients with complex message filters to achieve the same sorting result—nor maintain them.

The Outside Approach

At Jets International, which provides a matching service between private-plane operators with unused seating capacity and executives who need a flight, the emphasis of RSS is external, to keep suppliers and customers up to date on available flights and customer requests, according to Nate McKelvey, who serves as both CEO and CIO of the company. Plane operators have a custom RSS reader that keeps them updated on customer requests that match the available seating. (Jets International maintains a database of available jets and customer flight requests, generating the matched data for each client and sending it out as a custom RSS feed.) The reader works within Google, so the operators can conduct searches for executives with specific travel needs and further customize the RSS feed results. McKelvey is working on a similar option for executive travelers.

"We won't have to worry about e-mail fatigue, since they choose what to get," he says. But the bigger benefit, he adds, is the ability to make custom data easily available from multiple sources, since it's straightforward to generate data in the XML format that RSS uses. "You can now integrate as you see fit," McKelvey says.

Your Experience May Vary

The downside of RSS for CIOs at this point is its newness. Because it isn't yet clear how RSS will be used and where, CIOs are finding that they need to do a fair amount of custom configuring of the few tools available to meet their particular organizations' needs (see "RSS: The Next Generation," Page 24). In Bell's case, he had to integrate his enterprise RSS aggregator server from KnowNow with his Microsoft SharePoint portal and Microsoft ActiveDirectory directory service. In McKelvey's case, he had to write a custom reader for his 350 suppliers of

seats on private planes because it would have been too difficult, he judged, for his suppliers to configure a generic RSS reader themselves. The complex configuration has caused him to hold off on delivering RSS feeds to the company's several thousand customers: "I'll deploy it to them when there's no configuration to support," he says.

Similarly, Szalay's in-house developers have to write the applets that query the databases and generate the RSS files that are distributed via Dykema's RSS server from NewsGator. Both say the efforts are not difficult, because RSS uses just a portion of XML's functions, making the programming simple. Plus, developers are typically familiar with XML, so they can usually dive right in.

From Overload to Management

Like other knowledge-based IT projects, the hard benefits from the targeted information delivery that RSS provides are difficult to quantify. "How do you judge the ROI of accessing information more easily?" asks Phoenix CIO Bell. His RSS efforts fall into the technology exploration category, part of ongoing efforts to

The bigger benefit is the ability to make custom data easily available from multiple sources, since it's straightforward to generate data in the XML format that RSS uses.

identify promising technologies that might provide his business a competitive advantage. "It's not a significant amount of budget, since I don't know what I'll get out of it," he notes. Dykema's Szalay agrees the cost is small, in the low tens of thousands of dollars. "If it doesn't work out, that's OK," he says.

"We don't really know how we can use RSS for work purposes," says Mike Gotta,

63% of large companies will have syndicated content via RSS by **2007.**

SOURCE: JupiterResearch

principal analyst at the research firm Burton Group. While pioneering CIOs are already exploring some possibilities, they're all guessing at this stage, he notes.

Bell expects the use of RSS will increase employee satisfaction—something they can measure—by providing an alternative communications channel that won't overwhelm them, as well as provide hard-to-quantify work efficiencies. With RSS, Bell sees himself helping people to manage information, rather than simply installing and supporting tools. Analyst

Gotta concurs: "You have to let people shape their own world. We need multiple paths to information based on people's work style," he says. That's a key part of the RSS promise. **CIO**

Freelance Writer Galen Gruman can be reached at ggruman@zangogroup.com. Send your comments to Executive Editor Christopher Koch at ckoch@cio.com.



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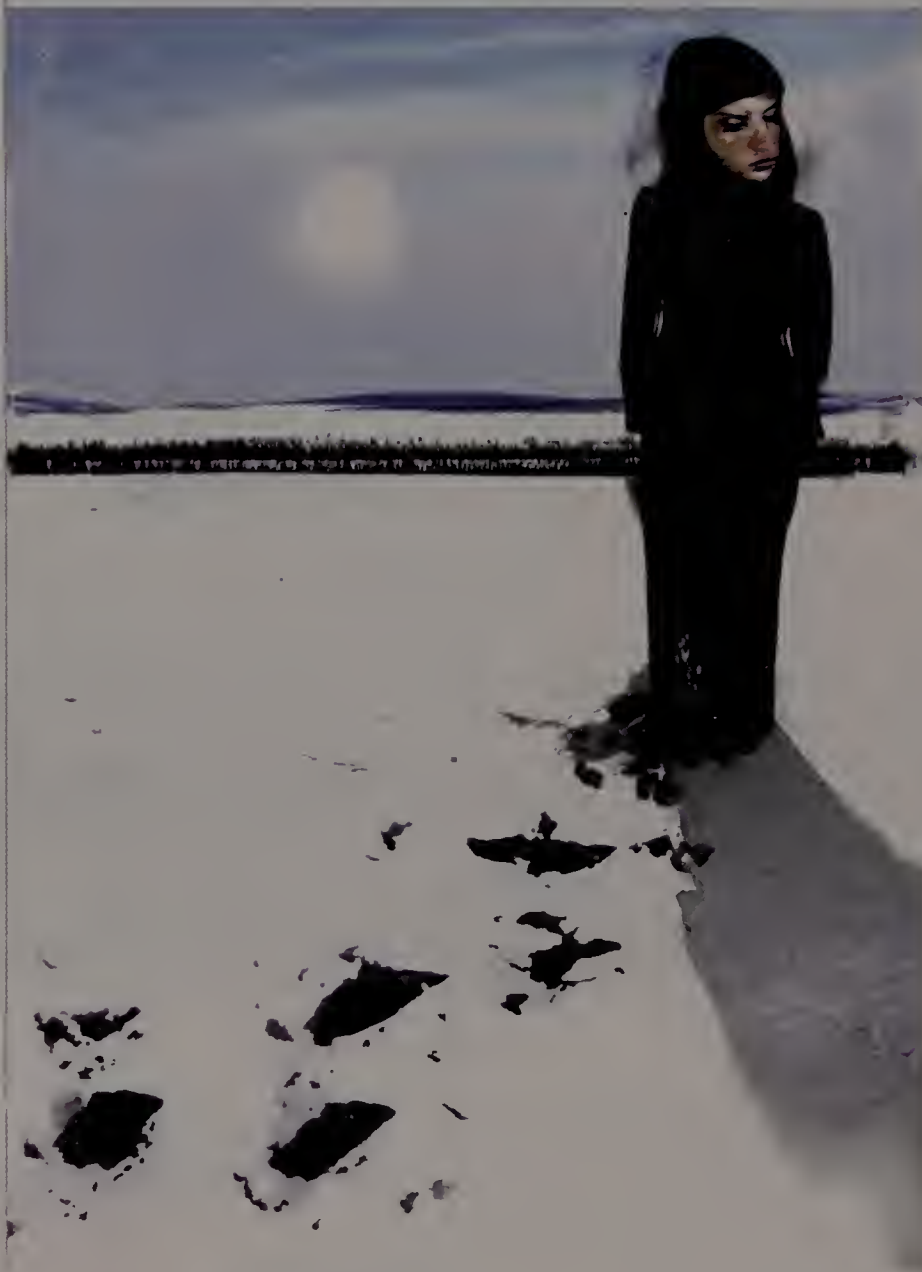
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Tracks in the Snow

IT projects are usually judged successes or failures when they go live. But look back and you will see the real judgment comes later—and that requires a new set of value criteria.



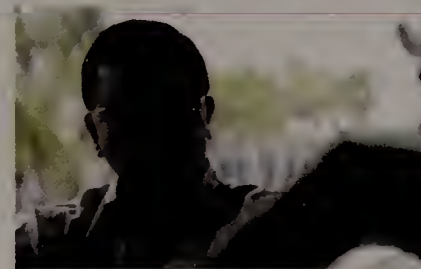
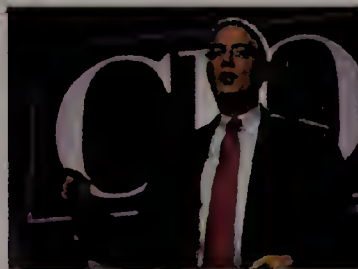
There's a tradition in IT project management that says if a project comes in on time, on budget and with the required features and functions, it is considered successful. Meeting that standard is difficult enough. A continuing study of thousands of IT projects by The Standish Group consultancy found that in 2004, just 29 percent of projects were successful.

But this definition of success needs revising. In performing 72 IT project retrospectives at 57 organizations since 1999, graduate students in the Master of Science in the Management of Information Technology program at the University of Virginia's McIntire School of Commerce have discovered that projects that were found to meet all of the traditional criteria for success—time, budget and specifications—may still be failures in the end because they fail to appeal to the intended users or because they ultimately fail to add much value to the business.

When Success Is Failure

We call these “failed successes.” For example, a real estate management company successfully completed a two-year project to develop a Lotus Notes-based CRM application that was designed to provide strategic advantage in leasing vacant space. The project met all the project specifications but didn't successfully integrate with the company's business processes. So in the end, no one used it. The company's CTO put it best: “The application is 100 percent effective at 100 percent participation and zero percent effective at 95 percent participation.”

Similarly, projects considered failures according to traditional IT metrics may wind up being successes because



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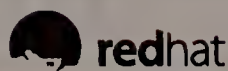
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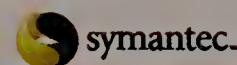
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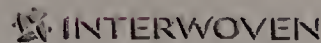


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despite cost, time or specification problems, the system is loved by its target audience or provides unexpected value. For example, at a financial services company, a new system to enable rapid development, testing, deployment and measurement of collections strategies and to improve collections performance was six months late and cost more than twice the original estimate (final cost was \$5.7 million). But the project ultimately created a more adaptive organization (after 13 months) and was judged to be a great success—the company had a \$33 million reduction in write-off accounts, and the reduced time-to-value and increased capacity resulted in a 50 percent increase in the number of concurrent collection strategy tests in production.

New Criteria for Success

Indeed, the true impact of a project may not be felt until long after installation is complete. The study data showed that beyond the traditional metrics of time, cost and product (an acceptable system of reasonable quality that meets specifications), the following additional criteria need to be applied to projects to determine long-term success.

- **Use:** The project's resultant products or services were used by its intended constituents.
- **Value:** The project led directly to the organization's improved efficiency or effectiveness (common metrics included NPV, IRR, EVA and the Balanced Scorecard).
- **Learning:** The project increased stakeholder knowledge and better prepared the organization for future challenges.

Interestingly, the retrospective data showed that across all stakeholders (project managers, their teams, project sponsors, top management and users), the top three criteria by which stakeholders judged a project's success were product, use and value, respectively. Meanwhile, cost was ranked lowest overall. None of the groups ranked learning (preparing for the future) in their top three criteria, although all of them suggested that learning was of at least moderate importance.

Although project managers and team members seemed to be more concerned with the traditional measures—in other

words, getting the project done according to specification, on time and on budget—users, not surprisingly, cared most about whether the system would be used as intended. It's hard to get

this perspective during the course of the project. The issues that matter most to users—use and value—can't be resolved until after the project is complete in the traditional sense. If maximizing overall stakeholder satisfaction is important, top managers should be focusing more on the product, use and value criteria.

This is why it's critical for CIOs to review projects both during and after installation if they are to build and maintain a long-term project success rate. Based on our six years of experience, retrospectives should be conducted after completing each major milestone in large projects, and one to two weeks after implementation. Benefits realization should be conducted later, when business value metrics can legitimately be assessed.

The top three criteria by which stakeholders judged a project's success were uniformly product, use and value.

The Benefits of Looking Back

If done right, retrospectives offer a variety of potential benefits. Effective reviews take stakeholders beyond their own personal impressions of the project and present a larger view of the organizational impact—a project that may have seemed “a nightmare” to an overworked IT project manager may actually be tremendously valuable to the organization. Reviews also create opportunities to make improvements in processes, procedures and culture—rather than treating each project as a one-off, in which the lessons of earlier projects are ignored or forgotten. Better estimating and scheduling of future projects are possible because the reviews capture historical data on the true size, effort and time involved in past projects.

Finally, project reviews have an invaluable human aspect. If a project went badly, people can acknowledge and repair relationship issues so that future projects can go better. If the project was a success, the review lets you reflect on accomplishments before going on to the next problem.

Project reviews expand the concept of the project time line. It can be difficult to adapt to the new way of thinking. Project managers must negotiate the trade-offs between process (time, cost and product) and outcome (use, learning and business value). The project charter should include negotiated success metrics, the project dashboard should enable real-time metrics, and the project retrospective should document the actual results, concluding with overall stakeholder satisfaction.

IT struggles with a continuing record of project failure. Yet the key to improving the rate of project success may lie right underneath managers' noses, in the form of comprehensive project retrospectives. There is a lot to be gained from looking into the rearview mirror from time to time. **CIO**

R. Ryan Nelson (rnelson@virginia.edu) is a professor and director of the Center for the Management of Information Technology at the McIntire School of Commerce of the University of Virginia. Send comments to Executive Editor Christopher Koch at ckoch@cio.com.

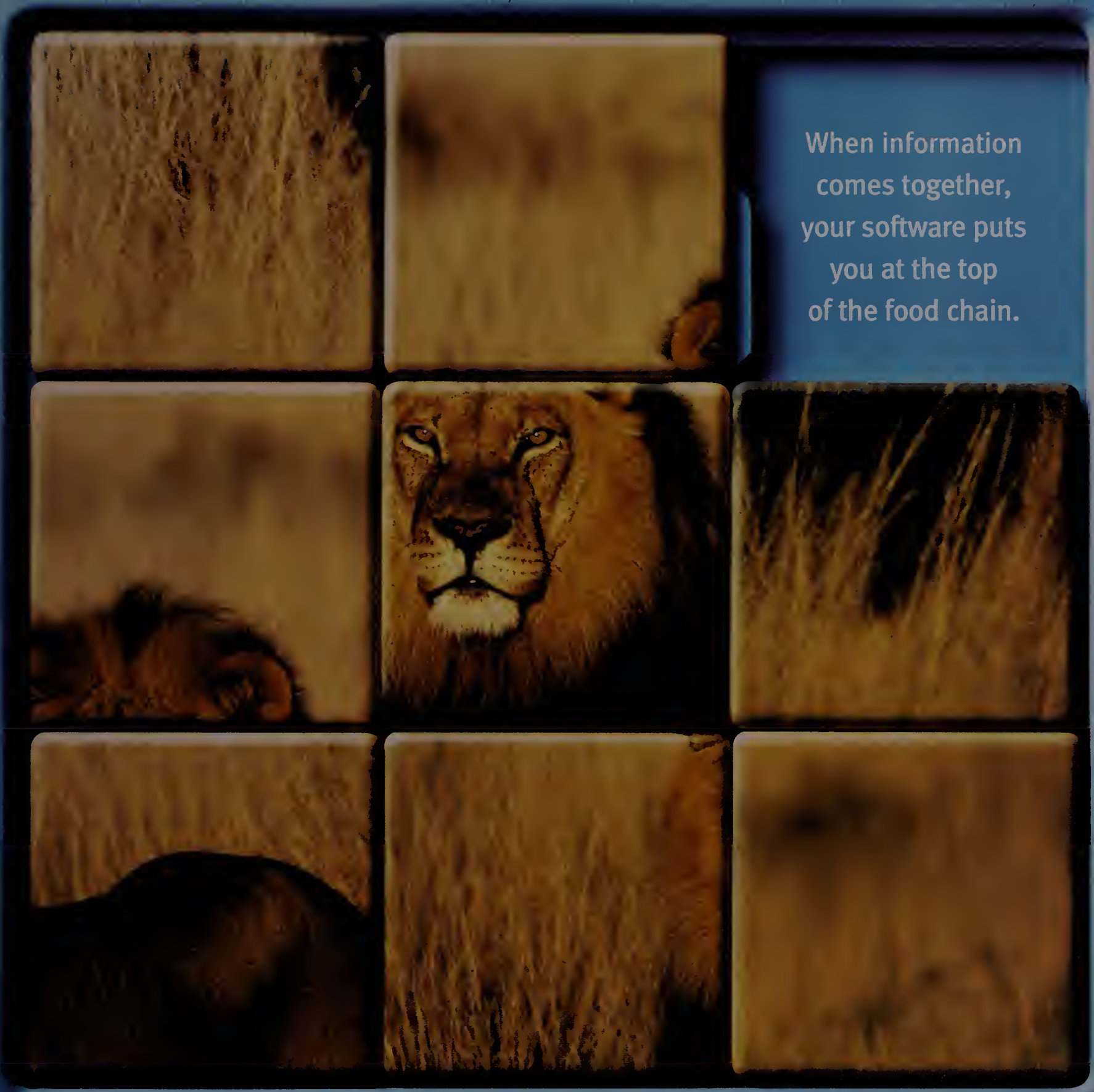


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Everyone Gets to Play

Good IT governance is not about committees, processes, forms and procedures. It's about involving as many people as possible. And then it's IT's job to support them.

BY LYNNE H. VOGEL



IT governance certainly has moved to center stage. MIT's Peter Weill published a book simply entitled *IT Governance*; there are conferences devoted exclusively to IT governance; an IT Governance Institute conducts research on the subject and, of course, almost every consulting firm under the sun now offers services to review and redesign IT governance processes.

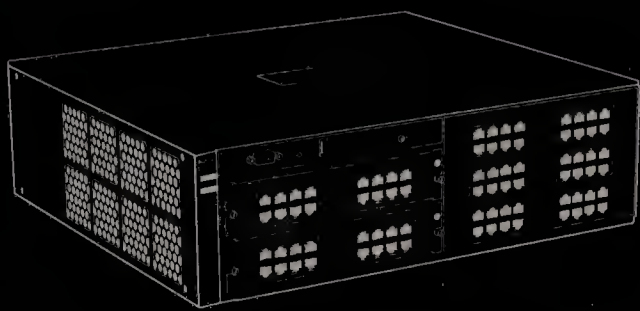
Everyone seems to be talking about IT governance, and most people agree that careful selection of who makes decisions about technology investments will have a major impact on how successful those investments will be. But how do you make good governance happen? The real challenge is not the designing of committees, processes, forms and procedures; it's meeting the challenge of participation.

Getting people involved is what IT governance is really about. As Weill notes, "Behaviors, not strategies, create value." For IT governance processes to make a difference, one of the primary behaviors that CIOs need to encourage is the broad participation of IT customers.

At the University of Texas M.D. Anderson Cancer Center, we try to stay away from calling much of what we do "IT projects" because we've discovered that it really does make a difference if investments are viewed as projects belonging to IT or projects belonging to the business and enabled by IT. Consequently, we have "business projects" in which IT is a major and often critical component. Only infrastructure investments are called "IT projects." By changing the way we speak about projects, we have been able to shift the focus of the enterprise from the technology decision to the business decision about how technology should be used.

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Thought Leaders, Opinion Leaders and Others

Just recasting IT projects as business projects doesn't, however, guarantee broad-based participation in IT governance. Building participation in the IT governance process requires three components:

- Involving thought and opinion leaders.
- Balancing individual needs and companywide requirements.
- Providing organizational support for participation.

The first step is to understand that there at least two types of participants in every organization: thought leaders (those who can think outside the box) and opinion leaders (those who are viewed as credible and trustworthy throughout the company).

In health-care organizations, for example, I have identified physicians who are thought leaders—the first to try a new technology and the first to want remote access to clinical data. They subscribe to technology publications and install sophisticated networks at home. Opinion leaders, on the other hand, tend to be more conservative in adopting new technologies, but when they do embrace them, you can be sure that their colleagues will follow.

A successful governance process requires a balance of participation between these two types of leaders. Both are needed to make good technology decisions. Thought leaders keep us focused on what the future holds; opinion leaders keep us grounded in what will really work.

Second, the governance process needs to include both those who are deeply knowledgeable about the business processes in their own departments and people who understand the importance and potential impact of IT investments across the

company as a whole. IT investment decisions must be both wide and deep in order to be truly effective.

Third, and probably most important, governance processes won't function well without

strong organizational support. Participants in the IT investment decision-making process are typically volunteering their time. Tasks such as providing monthly reports on IT investment progress and assisting in the development of benefits realization and ROI studies are time-consuming. Rather than expecting volunteers to do all this on their own, you need a team dedicated to supporting them and, by extension, the governance process.

Our governance team at M.D. Anderson started out as a traditional project management office (PMO). But we recognized

that many of our IT-enabled business projects were actually managed by project managers within the business units. So our focus shifted to two primary functions:

- Supporting the work of the various committees, including making sure that projects were properly documented and that monthly financial reports got produced.
- Serving as a resource to project managers throughout the company by sponsoring training seminars.

Each staff member in our new Project Support and Coordination Services Office is a trained project manager, most with formal project management certification.

Thought leaders keep us focused on what the future holds; opinion leaders keep us grounded in what will really work. Both are needed to make good technology decisions.

The ROI of Participation

After a major redesign of the IT governance process at M.D. Anderson almost two years ago, we were able to increase overall participation tenfold. We now have 200 people (out of 16,000 in the organization) taking part in IT governance. Each of these people spends at least an hour a month focusing on IT investments—discussing successes or failures, monitoring the progress of current investments and looking ahead at new directions and possible investments for the future.

Are our IT governance processes functioning any better with all of this participatory behavior? The answer is yes. In a formal review of our IT governance process by an independent third party, more than 85 percent of a sample of participants thought that the redesigned IT governance processes were a definite improvement over our previous processes. Having business owners participate in the technology decision-making process creates a sense of ownership, making information technology implementations not something “done to the business” by IT but something they have embraced from the beginning.

Broad participation in IT governance has been a critical factor in making IT investment decisions successful at M.D. Anderson. One might even argue that without governance participation, our track record of technology success would be in serious trouble. **CIO**

Lynn Harold Vogel, a member of the CIO Executive Council, is vice president and CIO for the University of Texas M.D. Anderson Cancer Center in Houston and an Adjunct Assistant Professor in the Department of Biomedical Informatics at Columbia University.



Talk Governance with Lynn Vogel

Join a teleconference Sept. 12 at 4 p.m. ET with M.D. Anderson Cancer Center CIO Dr. Lynn Vogel to learn more about how he obtained participation in **IT GOVERNANCE**. Register in advance at www.cioexecutivecouncil.com/public/teleconferences.

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Value? Added.

How CIOs can engineer a “tipping point” to speed up adoption of value management practices and prove—once and for all—that IT matters



Business leaders continue to view IT spending as an expense to be managed and not an investment to be optimized. This inability to quantify the value that IT delivers to the business is, in my opinion, what separates the CIO from a seat in the boardroom.

Most organizations have formed investment councils and require business cases. But very few have defined a “concept to cash” closed-loop management process that directs investments based on strategic portfolio targets, keeps initiatives on track by measuring success around project approach and holds senior executives accountable for demonstrating value. After all, real change isn’t easy.

In *The Tipping Point*, Malcolm Gladwell discusses engineering change with the minimum of effort. Although conventional wisdom says the progress of IT value management will be evolutionary, Gladwell suggests it can move rapidly if the three *Tipping Point* laws are applied: the power of context (sensitivity to environmental signals), the stickiness factor (memorable content) and the law of the few (the influence exerted by the socially gifted).

To explore the potential of these laws, consider the practices in place at a small, fast-growing technology company. Since its inception 10 years ago, the company has invested in technology to sustain growth with little consideration given to cost structure or vision for how IT will support its competitive positioning and core business processes. The CFO, COO and CIO make decisions regarding IT investments on a case-by-case basis. Requests and associated IT resource allocations are fragmented by department and have tenuous ties to strategy.

Let’s examine the power of context. It’s amazing how often



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executives fail to link value management initiatives to strategies and programs that are in place and have momentum. In the tech company, there are growth concerns since its primary market is becoming saturated. Yet IT's top objective is the integration of its existing ERP processes to knit sales together with downstream supply chain activities. In terms of the company's emotional energy, this initiative is a yawner and doesn't have the "coattails" to carry a value management initiative.

The CIO will be a more effective catalyst for change around IT investment if he taps into the company's emotional concerns around growth. For example, the CIO has uncovered business strategies that call for expanding sales within existing accounts by strengthening customer service and entering new markets with current products. Using this information, the CIO can help frame the business strategy so that the ERP initiative is linked directly to these goals.

Now that the CIO has captured the attention of senior executives, she can demonstrate the fit between current and requested IT projects, and define a targeted IT portfolio and supporting governance. The "closed-loop" management process should focus on basics such as ensuring that investments line up with portfolio targets, possess clear standards for accountability and success, and are monitored regularly via a project dashboard.

Next, let's discuss the stickiness factor. Too often, value management is designed for the needs of the enterprise and doesn't provide value to the manager submitting the request for IT funding. To stick, the changes must benefit everyone who needs to comply. Managers will promote a process that makes it easier for them to get funding for strategic initiatives.

There are several ways to accomplish this at the technology company. Senior executives could establish an experimental fund to test new product and service ideas. They might institute a fast-track approval process for growth initiatives. Or they could delegate funds to business unit or function heads for strategically aligned process improvements that utilize existing technologies and have a positive ROI.

Now, let's explore the law of the few, which identifies an organization's influencers. A mistake in catalyzing change is to overestimate the influence of mandates from the top. Senior executives operating alone can rarely create the grassroots support necessary for a value management initiative. But by tapping the right people in the social network, support will build, provided the other two laws are respected. The tech company needs to garner sponsors for its initiative by identifying influencers in sales, marketing and customer support.

CIOs pushing the rock of value management uphill need to reconsider their approaches. By viewing value management as a change initiative and leveraging Gladwell's laws, it is possible for CIOs to accelerate the adoption of value management practices and prove, once and for all, that IT does matter.

Reader Q&A

Q: Why have organizations been slow to embrace IT value management?

A: CIOs haven't been strong advocates of it, and many organizations have weak governance mechanisms. CIOs have long understood proving IT value is important, but they have lacked practical approaches to making it a reality since many have little experience in finance or Six Sigma disciplines.

From a governance perspective, CEOs have expressed frustration about the lack of understanding around IT value. Given the magnitude of its costs and frustration about delivery, IT is an easy target. In many cases, however, there is also a lack of measurement and accountability across the enterprise.

It is hard for CIOs to sponsor a value management initiative and it's easy to rationalize a lack of action, but the times, they are a-changing. Leading-edge organizations such as Intel are proving IT value management is real (see Intel's solution to "Calculating IT Business Value" at www.itsharenet.org under IT Management & Finance).

Q: Can you discuss value management from a government perspective?

A: Some IT leaders think value management is more difficult in a government setting because there isn't a P&L and therefore no financial definitions of value beyond costs. The good news is, there is little difference between for-profit and nonprofit approaches to IT value

management. The

approaches that work focus on the leading indicators to value.

These are opera-

Have a Leadership Question?

For more reader questions and answers from Susan Cramm, go online to www.cio.com/leadership.

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tional measures that are relevant to the business such as customer satisfaction, sales calls, cycle time and so on. These measures can be defined and measured regardless of the type of organization.

Value management implodes when organizations take a purely financial view, because there is not a direct correlation between many investments and the financials except in the case of cost cutting, which is no longer the main focus of IT investments. **CIO**

Susan Cramm is founder and president of Valuedance, an executive coaching firm in San Clemente, Calif. E-mail feedback to susan@valuedance.com.





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How to **Hook** the **Talent** You Need

Things to do today and tomorrow to keep your evolving IT department stocked with the best and most useful employees

BY STEPHANIE OVERBY

WANTED

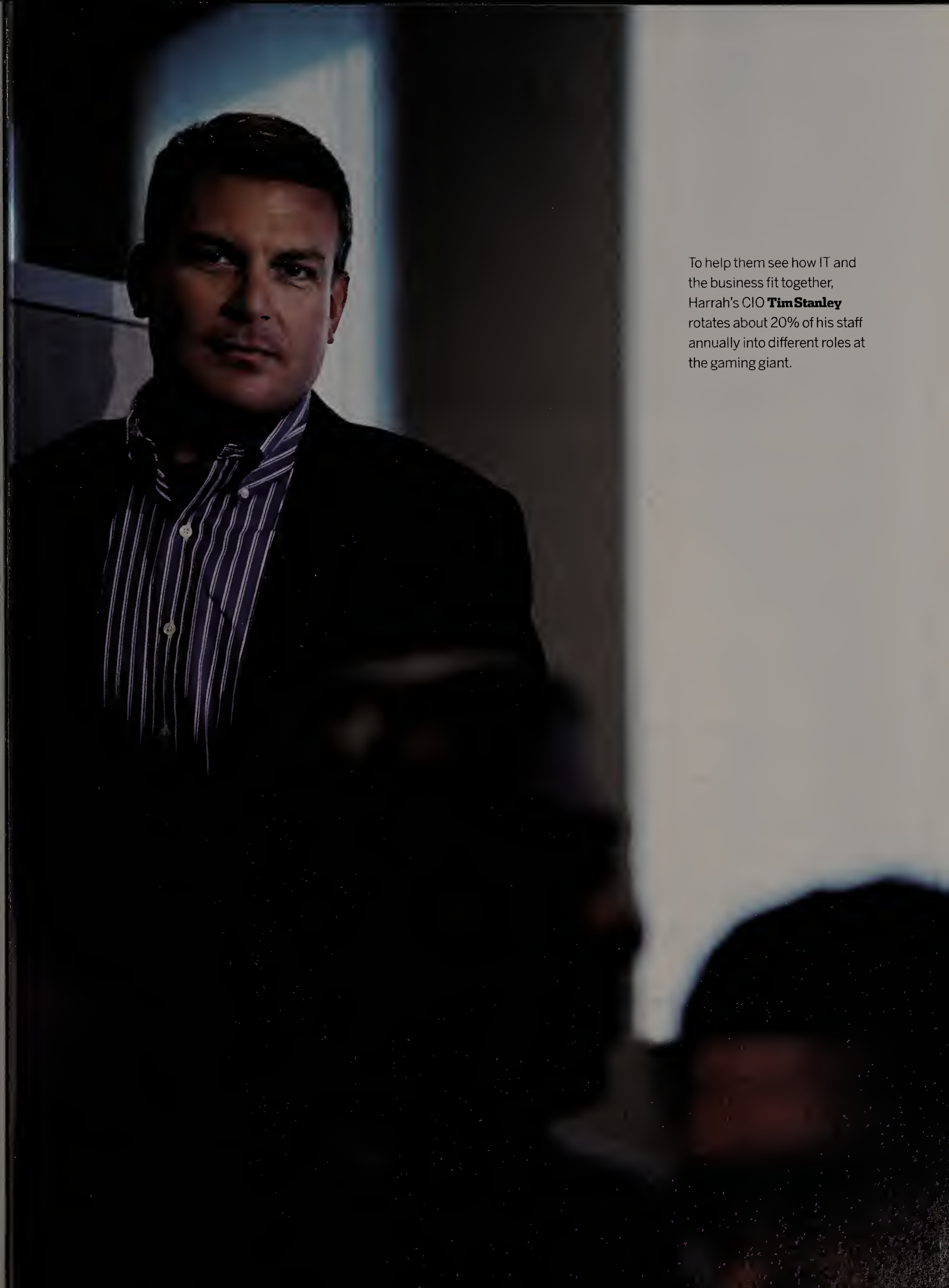
Experienced IT professionals with broad technical competency and working knowledge of both emerging technologies and legacy systems. Should have top-notch analytical and problem-solving prowess, excellent communication skills, and the ability to work well independently and as a member of a team. Must have experience in business process management, certification in project management and a solid understanding of enterprise architecture. Customer service attitude required. Vendor management background a plus.

It's no longer a matter of debate: The nature of IT is evolving from technical support center to innovative business partner. And the mix of skills needed to staff the new IT department is changing as well. While technical proficiency is still important, CIOs are desperately seeking hires with project management expertise, enterprise and industry knowledge, and the business skills necessary for customer-facing roles. Forty-one percent of CIOs said they place greater emphasis today on a job candidate's knowledge of business fundamentals than they did five years ago, according to a 2006 Robert Half Technology survey.

What is unclear is how CIOs will meet this demand. The supply of business-IT professionals is tight. Enrollment in U.S. computer science and engineering programs has plunged five straight years, down 50 percent from 2000 to 2005, according to the most recent study by the Computing Research Association. CIOs complain that students who do pursue traditional IT programs don't get adequate exposure to soft skills. Seasoned professionals with that valuable combination of business and technology skills inch nearer to retirement. One-third of U.S. workers will be over the age of 50 by 2010; the first baby boomers reach retirement age in 2011. Skilled midcareer workers, who could

Reader ROI

- :: How the evolving nature of IT affects the workforce
- :: Why CIOs need to plan now for the coming skills shortage
- :: Successful staffing tactics



To help them see how IT and the business fit together, Harrah's CIO **Tim Stanley** rotates about 20% of his staff annually into different roles at the gaming giant.

fill the gap, risk being ignored or underutilized.

Yet successful IT staffing is more important than ever. "Talent is *the* differentiator between creating significant business advantage with IT and not," says Alastair Behenna, CIO of global recruiter Harvey Nash Group.

Staffing pressures are affecting everyone, from smaller businesses to Fortune 500 companies, nonprofits to the public sector, industry to industry. In fact, IT leaders ranked finding, hiring and retaining workers with the needed skill sets among their top staffing concerns, according to CIO's "2006 Midyear Staffing Update."

"We're all going after the same talent pool," says Diane Wallace, CIO for the state of Connecticut. "These issues are going to be with us for a while, and there's no magic bullet coming. CIOs have to solve it for themselves."

A talent war is brewing, and CIOs cannot wait for the calvary to ride over the hill with the right recruits. "You're going to be in trouble if you're not working to interest kids in IT, to recruit them out of the university, to develop your own employees and retain them," says GM CIO and group VP Ralph Szygenda.

To win, CIOs must arm themselves by taking significant steps to ease today's staffing squeeze and lay the groundwork for tomorrow's growth. Prepare your own battle plan by studying the tactics—some old, some new—employed by forward-looking CIOs.

the big picture

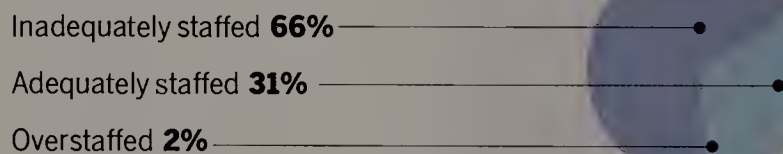
2006 Midyear Staffing Update

CIO's survey of 269 IT executives reveals their current and future staffing needs, what they're doing to retain and motivate employees, where they're spending limited training dollars, and what their worries are as they stand on the cusp of a fundamental shift in IT—and IT staffing. For details, see the charts here and on the following pages.

The Crunch Continues

For the second straight year, the majority of IT leaders indicated their staffs were stretched thin.

How would you describe your current staffing environment?

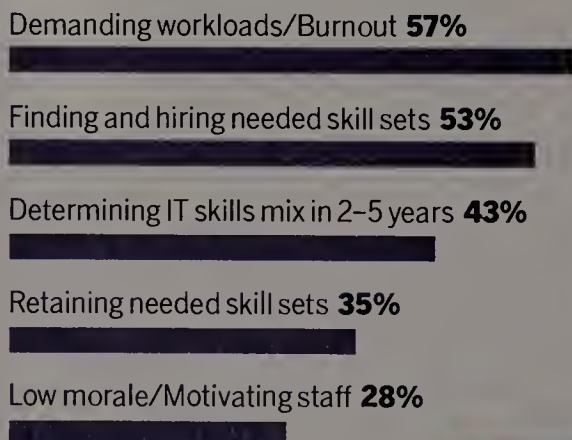


NOTE: Numbers do not add up to 100% due to rounding.

What Keeps CIOs Up at Night?

While CIOs remain most concerned about the demands being placed on their staffs, skills shortages and worries about the future weren't far behind.

What are your top concerns regarding your IT staff in 2006?



NOTE: Respondents chose three

CIO RESEARCH

5 things to do today

1 Rethink Hiring Practices

An alarming disconnect exists between what CIOs claim to want in entry-level candidates and the skill sets of those they actually hire. Business capabilities and project management expertise represented eight of the top 10 skills identified as critical to keep in-house, according to a recent survey by the Society for Information Management (SIM). However, the majority of respondents primarily sought technical skills in entry-level recruits.

Why the incongruity? CIOs who have spent years looking for technical proficiency may have trouble adjusting their hiring practices to net candidates with business and IT skills. "This is new territory. We know what to look for in pure IT roles that have comfortable certifications, job titles and descriptions to measure against," says Harvey Nash's Behenna. "[These new roles] are still in their infancy."

Chris Stockley, CIO and VP of \$4.2 billion building contractor Skanska, wants employees with a customer service mind-set who excel at communication and collaboration. "Technical proficiency is something we look for," he says, "but it's the last criteria we care about."

Stockley uses various tactics to tease out business skills in candidates after their initial HR screening and interview. For instance, all potential hires must give a presentation about anything...except IT or the construction industry. "The content is irrelevant. I've seen presentations on everything from how to bake chocolate chip cookies to how to shoot pool," says Stockley. "The issue is how they communicate and [how they] handle a stressful situation."



To tease out their business skills, Skanska CIO **Chris Stockley** puts potential IT hires through a simulated customer service exercise.

A handful of IT employees, the hiring manager and one of a rotating group of senior executives sit in on the presentations. Candidates could find themselves explaining how to fold a napkin to the CEO. It's not a pass-fail assignment; one of Stockley's best directors of customer service bombed her first time out. She won the position by asking for another shot and turning her performance around.

"You may uncover some not-so-positive characteristics. It doesn't mean you don't hire someone, but you know the areas of potential concern. You've had a positive conversation about improving their skills before they're even an employee," he says.

Stockley then puts job candidates through a simulated customer service exercise. A potential member of the infrastructure team may have to communicate a technical issue to a businessperson face-to-face. "We look at how well they settle down the customer. Or how well they provide a nontechnical description of a technical issue," says Stockley. "We put everyone through it."

2 Collaborate with HR and Recruiters

CIOs tend to be do-it-yourselfers, says Katherine Spencer Lee, executive director of Robert Half Technology. That can be a problem when it comes to staffing. "They don't take advantage of

all the resources at their disposal," says Lee. Human resources professionals and recruiters can be the CIO's best friend, she says. But for that relationship to bear fruit, CIOs must make time to convey their staffing needs.

GM's Szygenda recruits mostly midlevel and senior-level employees for project management, business liaison and vendor management positions. The hardest slots to fill are his "process information officer" roles, which require a solid IT background and strong business operations experience. "Finding those people is getting harder and harder," says Szygenda. "And the recruiters bring us the same people over and over."

His solution? Meeting with recruiters regularly. "They have a lot of clients. They go to whoever screams the loudest," he says. "We set aside time to meet with them every week and put pressure on them to come back with someone outside their database."

Skanska's Stockley invites recruiters to IT's annual vendor event, where he shares his group's recent accomplishments and three-year plan. "We may not specifically say, 'In three years, we'll need this particular skill set,'" he explains. "But this way they not only understand our hiring processes but they also know what's coming in the marketplace."

At the most recent event, Skanska highlighted its new focus on application integration and its need for project managers with application integration experience and for business process analysts. "The recruiters started sending us viable candidates before we had even opened a rec for any positions," says Stockley.

3 Bring Back Bonuses and Other Benefits

Retention wasn't a problem during the economic downturn. "The job market was so bad that CIOs said, 'Nobody's going to go looking around,'" says Kate Kaiser, the Marquette University associate professor who led the SIM study. That's no longer true. Bureau of Labor Statistics data shows tech employment above its 2001 hiring peak, with 3.5 million U.S. IT professionals employed today. A healthy job market is bad news for CIOs who aren't working to retain their best and brightest.

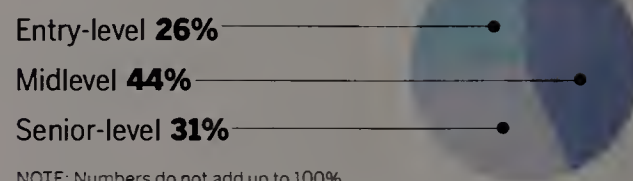
"Incentives, special compensation programs and signing bonuses are more of a requirement today," says Szygenda, who finds himself offering more money to attract and retain employees. "We didn't have to do any of that a few years ago."

GM declined to elaborate on its compensation tactics. However, average IT compensation will rise 4 percent this year, according to Forrester. But salary increases can vary wildly from job to job. Workers in roles vulnerable to automation or outsourcing, such as call center, applications maintenance and technical support, may actually see their pay decline, says Forrester. Those with skills in service-oriented architecture, business process reengineering and project management, where demand for workers outstrips supply, will see double-digit salary growth.

Not everyone has money to throw at the problem. Larry Bonfante, CIO of the U.S. Tennis Association, a \$220 million non-profit, vies for talent with Manhattan's financial services firms. "J.P. Morgan is a half-hour train ride away, and they pay twice

Who You're Hiring and What Skills You'll Need

What level employee are you hiring?



NOTE: Numbers do not add up to 100% due to rounding

IT leaders anticipate a leap in the need for senior-level skills such as business process management, database management, program management, enterprise architecture and strategy in the next two to five years.

Business skills	Hiring currently	Outsource currently	Will need (in 2-5 yrs.)
Project/program management	23%	17%	60%
Business analysis	22%	11%	53%
Relationship management (internal)	12%	4%	39%
IT finance	8%	8%	28%
Strategist/Internal consultant	7%	9%	40%
IT HR	6%	10%	21%
Vendor management	4%	5%	27%

Technology skills	Hiring currently	Outsource currently	Will need (in 2-5 yrs.)
Application development	36%	47%	52%
Business process management	17%	9%	55%
Systems analyst	17%	10%	39%
Help desk/User support	16%	19%	32%
Database management	14%	19%	49%
Enterprise architect	14%	12%	41%
Networking	12%	16%	32%
QA/Testing	12%	17%	28%
Web services	10%	26%	33%
Website development	10%	33%	30%
Security	9%	14%	42%

NOTE: Respondents chose three

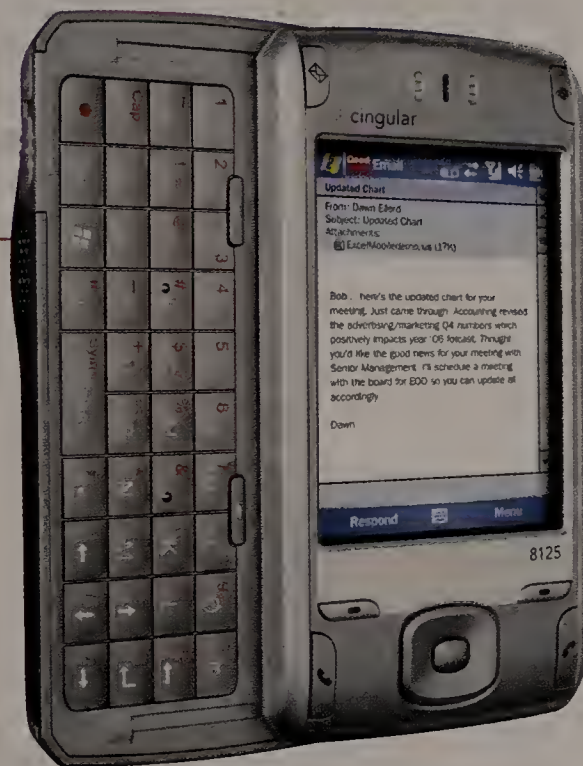


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raising the bar 

as much," says Bonfante. To compete, he plays up the excitement surrounding the USTA and its collegial atmosphere. "We try to create a context that people find more attractive."

His most valuable perk? Flexibility. "We don't chew people up and spit them out like the financial services industry," says Bonfante. "That's compelling to a lot of people." It's how he attracted two of his best directors, both women with small children. "We allow people to work from home and provide flexible hours for many staff," says Bonfante. "I'm not a clock watcher. I'm interested in results. If you have to leave early to go to a ballet recital, God bless."

A third of IT workers said they value a flexible work schedule more than other nontraditional benefits, according to the "2006 Compensation and Benefits Report" by Hudson Highland Group. "Employees are more willing to forgo additional cash in order to have a more improved work-life balance," says Peg Buchenroth, Hudson Highland Group's managing director of compensation and benefits.

Flextime is also the most common benefit used to motivate or retain IT workers, according to CIO's staffing survey, with 61 percent of organizations employing it.

4 Get Creative About Training

Another benefit IT professionals value is job-related training, according to the Hudson report. But training budgets got slashed during the downturn, and bringing them back remains challenging. Some CIOs have coped by finding creative ways to fund training.

Connecticut CIO Wallace needed business-savvy staff with good communication and negotiation skills to market IT-business solutions to internal customers. To cultivate these talents in-house, she sacrificed an upgrade to her project management software and funneled that \$11,000 into a customized four-day training program developed with a local college. "We can upgrade the application next year," says Wallace. "What good is a software upgrade anyway, if you don't have the right skills to pull it off?"

CIO Alan Boehme takes a different tack at Juniper Networks, a \$2 million router manufacturer that competes with the likes of Cisco. Boehme tracks all the money IT generates or saves the business and reinvests a percentage in professional develop-

the big picture

Training Days

Respondents spent an average of 7% of their 2006 IT budget on training in a variety of business and technology skills.

What kinds of training are you spending on?

Application development **51%**

Project/program management **49%**

Security **40%**

General leadership **35%**

Database management **32%**

Networking **30%**

Business process management **27%**

Enterprise architecture **26%**

Web services **19%**

Business analysis **17%**

CIO RESEARCH

ment, such as funding staff training at the Project Management Institute. "We make the case that a portion be used in IT for training and education in order for us to become more operationally proficient and able to deliver future benefits to the business faster," he says.

Others take a do-it-yourself approach. Harrah's CIO Tim Stanley came from companies that valued training and offered robust corporate programs. At the gaming giant, he developed his own program to cover business and technical subjects ranging from finance to data architecture. The program was developed by in-house staff who had subject area expertise and some background in training.

For advanced training, he's called on his vendors to help by building into their contracts a number of prepaid training hours. Tibco, for example, offers training on everything from basic technology to advanced architecture training. But Stanley insists vendors do it onsite and within the context of Harrah's systems. He also works with other third parties to offer online certifications for his staff.

5 Launch Business-IT Rotation Programs

Harrah's Stanley knows the benefit of employee give-and-take with the business. He rotates about 20 percent of his

IT staff annually into different roles in the department or the business, sometimes during a project. He also actively recruits IT-savvy business staffers from local properties and corporate business functions. The business doesn't protest. "We've given more than our fair share," says Stanley. "Marketing and operations pilfered from us for years because IT folks have functional knowledge and orientation in logic."

Stanley attracts businesspeople to IT by selling them on driving change. "They think it's pretty cool, and they know it won't preclude them from going back out into the business," he says. One employee from the strategic database marketing group who left to work as a property director for Harrah's has returned to IT as director of enterprise business intelligence. That broader exposure makes it easier for employees to see how IT and the business fit together.

However, CIO's staffing survey found only 11 percent of respondents offer job rotation programs. That's a missed opportunity.

"I believe in rotation programs," says Wallace, who's introducing them in Connecticut. She's particularly high on short-term job swapping. As vice president of IT at CNA Financial, she had the IT and business manager on a project switch roles for three



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months. "It worked well. They were both job swapping temporarily, so they had an interest in the other being successful," says Wallace. "It also helped us identify people from the business that we eventually sucked into IT."

Wallace also fosters a business-centric environment to nurture such skills in her IT staff. "If there's an application development effort, I don't have them measure success by whether it came in on time, on budget and according to spec. I insist they take it a step further and add business metrics."

Each member of her technical staff is devoted to a specific internal customer. As they learn more about the customer's business objectives, Wallace encourages workers to share knowledge during monthly IT staff meetings.

5 things to do for tomorrow

1 Go Back to School

Kevin Gallagher cringes when CIOs complain that recent computer science grads aren't exposed to business principles. "I have to say, 'Ahem, I teach information systems in a business school,'" says Gallagher, assistant professor of Management of Information Systems at Florida State University's College of Business. "We teach students about project management, communication and leadership."

CIOs need to quit complaining about college IT programs and get involved in shaping their future workforce, says Stephen Pickett, SIM president and CIO and VP of trucking company Penske. "I encourage any CIO to work with their local university to make sure they're developing the kind of individuals they need," he says. Pickett himself helped introduce new business classes to the technical programs of two universities. He suggests CIOs get involved in undergraduate computer science as well as in master's programs in information systems and IT divisions of business schools.

CIO support is the key to such efforts. For example, GM's Szygenda sits on the board of Carnegie Mellon University. He also helped create an online master's program there to offer technology training to business professionals including GM employees. "The model we're trying to create everywhere is to turn out professionals who have both the technical and the business training," he says.

"You're going to be in trouble if you're not working to interest kids in IT, to recruit them out of the university, to develop your own employees and retain them."

—GM CIO RALPH SZYGENDA

In an international twist, Szygenda is jump-starting similar efforts with universities in countries where GM does business, such as China, India, Russia and Brazil. Technical programs in these countries are top-notch, says Szygenda, but business education within them is practically nonexistent. So he's introduced GM IT's Skills for Success business training in local languages.

2 Spread the Gospel of IT Careers

Connecticut's Wallace values business savvy in her employees. However, "not everyone in IT has those skills," she says. So she actively recruits from the business community. "I know IT can be a very attractive place for them if I market it correctly," says Wallace. "I tell them that the great thing about IT is that it's one of the few places in any organization—from

state government to the private sector—that touches every important project going on in the business."

Wallace pitches business recruits on the chance to get involved with large, strategic projects across all the state's divisions instead of working on one initiative in a non-IT department. Her marketing mantra? "You don't need to know how to code."

Smart CIOs are also preaching to the next generation of workers. It's not just a goodwill effort. Hands-on marketing by technology leaders is critical to counteract the bad rap IT jobs have gotten. "Students think all IT jobs are being offshored, and they make the mistake of thinking that outsourcing and offshoring are synonymous," says Pickett. "You can clear that up, and it's very exciting."

Wallace also goes on campus in her efforts to get the word out. "I encourage students to take certain courses—project management, negotiating, communications—that will help them straddle the IT-business fence," she says.

Spreading the good news of technology opportunities may have to start even younger. "There's much more work to do in the K-12 environment to encourage math and science," says Phil Zwieg, VP of IS of Northwestern Mutual. "The numbers there are depressing, particularly with girls." (For more on K-12 IT education, see "Computer Education's Failing Grade," Page 18.)

For some years now, Zwieg's IT HR team has worked with a local high school to set up IT career days and help with class development. "HR organizations know there are challenges coming in the next five to 10 years," he says. "It's important to continue to reach out to high school communities."

Drill Into the Data

For a more in-depth look at CIO magazine's **2006 MIDYEAR STAFFING UPDATE**, including a list of top skills by region, go to www.cio.com/090106.

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Continued on Page 52

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Next Generation IT

Insights *The Business Value of Innovation*

I**T BUSINESS LEADERS** have critical needs. They want to improve business processes, reduce costs and grow their customer relationships.

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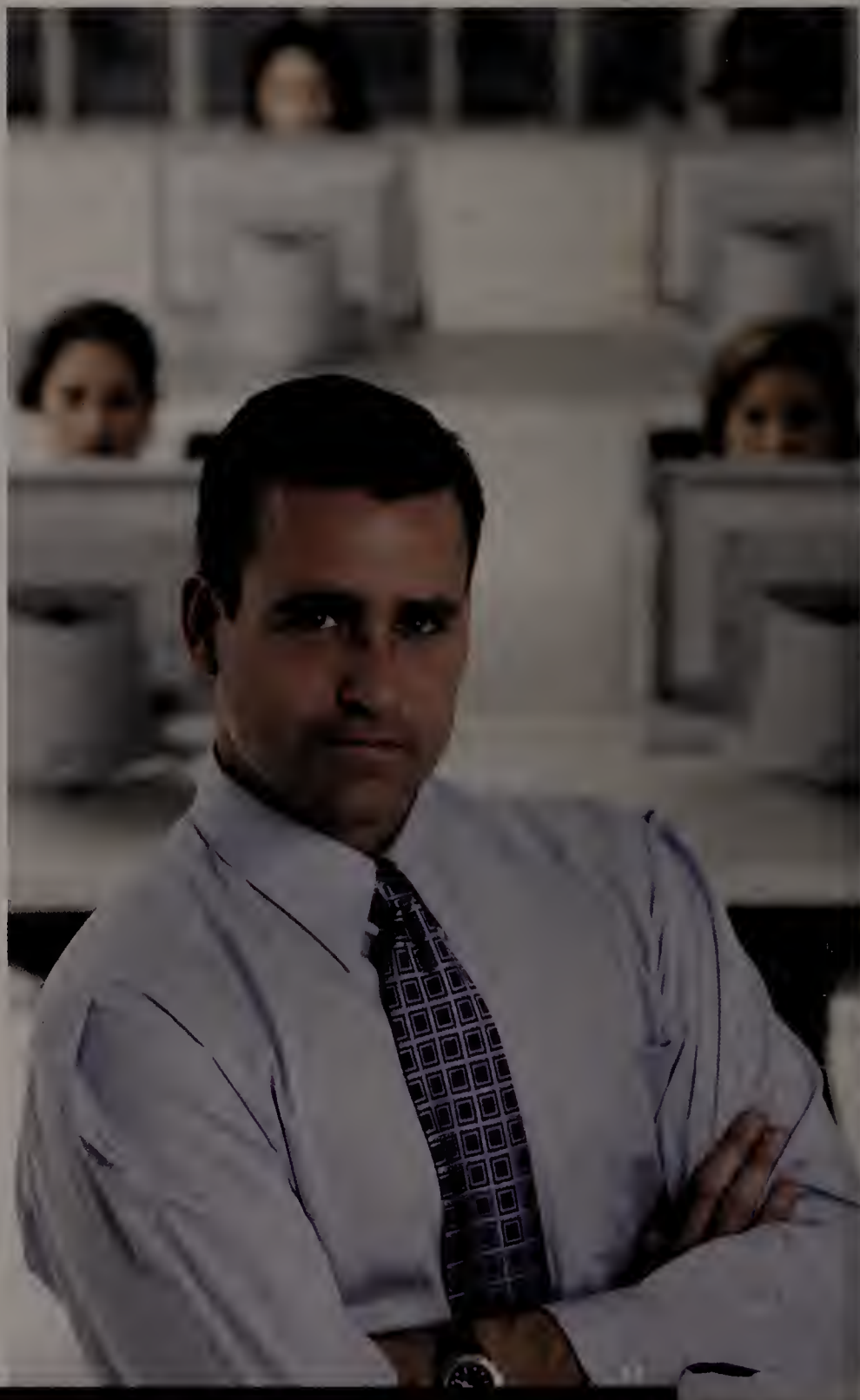
ageability capabilities—even when they are powered off or when their operating system is down.¹

Indeed, Intel vPro technology is nothing less than a revolutionary shift in desktop PCs, with built-in manageability, strengthened security, and energy-efficient performance.

Intel vPro technology will deliver these benefits starting in September through broad collaborations with industry-leading software leaders and IT outsourcers, and with support from PC system manufacturers around the world.

Inside Intel® vPro™ Technology

In much the same way that Intel® Centrino™ mobile technology brought added value to the mobile market, Intel vPro technology offers business IT a competitive edge by building in breakthrough innovations



At the heart of the Intel® vPro™ technology-based PCs is the dual-core Intel® Core™ 2 Duo processor.

and technologies to help get the most out of resources and shrinking IT budgets.

At the heart of the Intel® vPro™ technology-based PCs is the dual-core Intel® Core™ 2 Duo processor.² This next-generation, 64-bit microarchitecture provides amazing gains in performance—improving responsiveness and productivity at the same time that it offers the potential to reduce power consumption.

But there is much more to Intel vPro technology than having the world's best processor.² It contains technology that is the future of the digital office, with critical capabilities not found in previous generations of business PCs or software-only solutions. With Intel vPro technology, you can manage desktops that are powered down or whose OS is inoperable—all with full support for Microsoft Windows Vista Premium. With Intel vPro technology, you can spend less time managing your PCs and more time focusing on strategic business initiatives.

And Intel vPro technology delivers a new level of security and efficiency that can reduce total cost of ownership (TCO). For example, it means you can readily detect and locate PCs on the network even if they are powered down or do not have a functioning agent. What's more, you can remotely fix PCs even if the OS is down, automatically detect changes in manageability and security software, and immediately remediate security vulnerabilities to keep your environment more secure. Intel vPro technology-based PCs enable you to easily wake PCs, with greater security than alternatives like Wake on LAN.

Intel vPro technology-based PCs—with built-in manageability, strengthened security, and energy-efficient performance—will also include Intel's latest integrated graphics. That means they can provide performance for mainstream business applications and will be capable of delivering the full array of graphics interface features in the forthcoming Microsoft Windows Vista Premium operating system.

Global Services Giant looks to Intel® vPro™ technology

EDS is a leading global technology services company that pioneered the information technology outsourcing industry more than 40 years ago. Today, EDS delivers a broad portfolio of information technology and business process outsourcing services to clients in the manufacturing, financial services, healthcare, communications, energy, transportation, and consumer and retail industries and to governments around the world.

Recently, EDS investigated new hardware-based capabilities that are built into PCs with Intel® vPro™ technology. EDS concluded that these capabilities could significantly improve remote inventory, management, security, and update tasks, especially for PCs that are powered down, whose operating system is not working, or which do not have management agents installed.

In PCs with Intel® vPro™ technology, virtualization capabilities are built into system hardware. These capabilities deliver a tamper-resistant platform on which a dedicated virtual appliance can function. EDS now has the option of using an isolated, tamper-resistant space from which to service an inoperative user OS. Third-party vendors are already using this dedicated OS to build virtualized manageability and security applications for business PCs.

EDS is now expecting to use the embedded capabilities built into these PCs with Intel® vPro™ technology to achieve greater visibility into its customers' assets, from initial deployment through the life of their business agreements. This will help EDS streamline and automate more processes, improve service-level agreements, reduce manual inventories, and increase service offerings to customers.

For more information about EDS and Intel vPro technology: Visit <http://www.intel.com/vpro/> for all the details and additional resources

Accelerating Business Success

The bottom-line benefits of Intel vPro technology include safer, better managed infrastructure and, as EDS discovered, more accurate asset inventory and improved end-of-lease inventories as well as the ability to remotely repair PCs. In short, the most crucial result is that PCs will truly begin to be more manageable. Intel vPro technology works with leading software solutions to deliver built-in manageability, strengthened security, and energy-efficient performance. Free up resources for innovation—shift your focus from PC management to accelerating business success with Intel vPro technology.

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1 Intel® Active Management Technology requires the platform to have an Intel® AMT-enabled chipset, network hardware and software, connection with a power source and a network connection.

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the big picture

He worked on an initiative last month cosponsored by Marquette University, the Wisconsin chapter of SIM and the city of Milwaukee. Nearly 500 juniors and seniors from local public high schools who were summer interns for area firms and the city itself were treated to a day on campus, including lunch. More than 20 companies and colleges set up booths and interactive exhibits to encourage student interest in IT degrees and jobs. It's a new effort, but Zwieg believes it will result in more enrollment in science, technology, engineering and math programs.

CIOs may be disinclined to spend their already limited time with young students because there's no near-term ROI, says Marquette University's Kaiser. But long-term benefits could be big. "You can get to some of these kids who would never even think about going to college, let alone go into IT, and open up their eyes to the possibilities," says Kaiser.

3 Invest in Interns

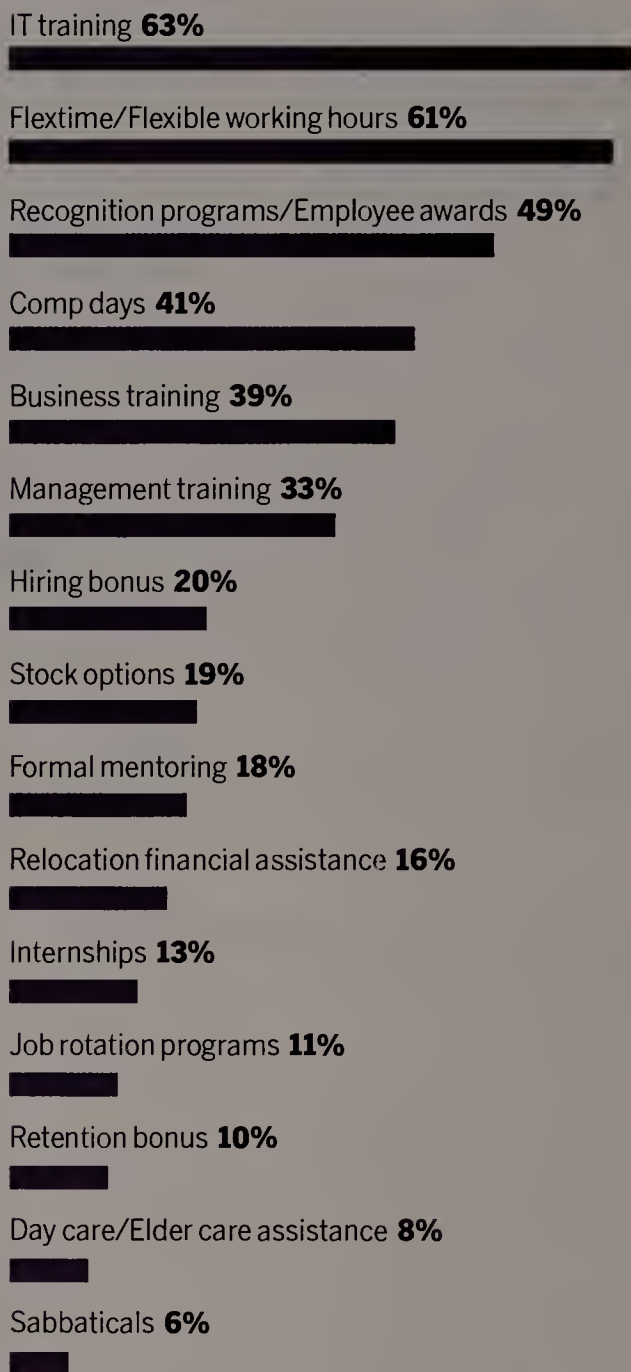
Juniper's Boehme is a big believer in internships. Interns are on the job at Juniper's offices in Sunnyvale, Calif.; a similar program launches in Europe this fall. They're not all the usual suspects: One is studying journalism and has taken charge of the IT newsletter. The program required investment in training and management oversight, but Boehme says it pays for itself. "It costs a lot less than bringing in contractors to do the same work," he says. "At the same time, we are able to build a future pipeline of potential candidates for full-time positions."

Boehme is in the minority. Internship programs seem like a win-win for CIOs—eager young minds for cheap—but an effective program that benefits both the intern and the organization takes significant investment with no guarantee of a good return. As a result, according to CIO's annual staffing survey, only 13 percent of IT leaders have an internship program in place today.

Valuable Retention Tools... and Missed Opportunities

Many respondents said they offer important benefits and motivators like flexible hours, recognition programs and technical training. But only a fraction offered equally valuable programs such as internships, job rotation programs, formal mentoring and family care assistance.

What do you offer to motivate or retain IT staff?



CIO RESEARCH

Harrah's Stanley is a fan of graduate school recruiting but initially resisted investing in an undergraduate internship program. "I wrestled with it," he says. "Young people flip-flop quite a bit before they figure out what they really want to do."

Growing concern about the future supply of IT workers changed his mind. "Kids are coming out of school without the skills necessary to be productive," he says. "They may be brilliant at code, but they're not coming out fully experienced for customer-facing roles."

Harrah's IT internship program is now in its third year, with 15 undergraduate students and one graduate student on board. Each has an area of interest, from project management to security. Stanley seeks out students with a good academic track record and extracurricular projects related to their major. They intern for one or two years.

"The program has grown 25 percent year over year, and our retention rate is very high," says Stanley. Between 20 percent and 50 percent of interns have gone on to accept jobs at Harrah's. The program takes management energy and time but interns who are later hired are ready to hit the ground running. "There's no telling whether or not they'll get restless here at the five- or six-year point," says Stanley. "But I'm encouraged."

4 Blaze New Career Paths

A big concern for students and technology professionals alike is the shape career paths will take as IT's staffing needs evolve. "Beyond starting out as a programmer and ending up as a CIO, they have no idea," says FSU's Gallagher.

In fact, most CIOs are struggling with this. "It's not as clear as it once was when you went from programmer to analyst to systems analyst to project analyst to project manager to manager," says Zwieg of Northwestern Mutual. "We haven't quite figured it out."

Even as CIOs sort it out, some are taking tangible steps to make career progression less of a mystery.



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Wallace is hampered by the rigid career paths defined by the state of Connecticut—a developer must progress on the development path; it is difficult to move horizontally or upward into, say, an architecture role. Yet, creating new opportunities is key to retention, she says. “IT people are job hopping, and if you don’t provide them a way to move ahead they will leave.”

So Wallace asks every employee where she wants to be in two years and creates a development plan to help get her there. A supervisor reviews the plan quarterly with the employee as part of performance evaluations. Wallace says it is too soon to talk about outcomes but notes that this tactic made it easier to promote more from within and reduced turnover when she used it at previous employers. It’s a smart move. IT workers are more likely to walk out because they see no opportunities for advancement than for any other reason, according to Hudson Highland Group’s “2005 Retention Initiatives Report.”

If you can’t offer prized employees a promotion or more interesting work, say some CIOs, you might help them find a larger role outside the organization. “The biggest issue I have is career progression at the senior level,” says the USTA’s Bonfante. “For some, the only thing they can aspire to is me getting hit by a bus in the parking lot.”

Bonfante naturally offers upwardly mobile employees more compensation and responsibility. But at a certain point, it’s up or out. So he sometimes uses his connections to help them find new jobs. It’s beneficial all around. The employee moves into a bigger role (albeit at a different company), an opportunity opens up within IT, and inevitably it leads to referrals from the worker you helped. “I’ve found that good karma comes around,” says Bonfante.

5 Get Serious About Knowledge Retention

For some CIOs, the solution to their staffing worries may be sitting just down the hallway. But few have truly thought ahead about how to keep veteran workers and their wealth of knowledge from walking out the door.

With the boomer generation fast approaching retirement, CIOs need to put such tactics in place to retain valued employees. “More of that is going to be needed,” says Northwestern Mutual’s Zwieg, who retires this year. “There are different ways to deal with the more mature worker: modified work schedules, different benefit packages, consulting opportunities.”

Retention of senior staff is top of mind for Wallace: Half of her IT department is eligible for retirement between 2008 and 2010. And she’s got a load of legacy technology work that was never fully documented. To keep those workers in the fold, Wallace makes sure they get the same training, recognition and reward opportunities as everyone else. Midcareer workers and those approaching retirement are sometimes overlooked by managers dazzled by younger hires with the latest skills. This lack of attention can lead to poor morale, a decline in productivity and an exodus of older workers.

“Talent is the differentiator between creating significant business advantage with IT and not.”

—ALASTAIR BEHENNA, CIO, HARVEY NASH GROUP

“You want every employee to be motivated right up until the day they go,” says Wallace. “They may even defer their retirement and hang around a little longer.”

Mentoring programs can also be an effective tool to encourage knowledge sharing across generations. However, only 18 percent of organizations offer formal programs, according to CIO’s staffing survey.

Creating an effective mentoring process isn’t easy. And it shouldn’t be a one-way street. A good program is not just about making sure older workers who understand Cobol pass on that knowledge. Older workers are often interested in learning from their mentees. “They get excited about learning about Java,” says Marquette’s Kaiser. “They like the challenge. And they want to learn new skills themselves.”

Stanley just conducted a two-year pilot mentoring program at Harrah’s. “We found that employees who had good experiences working with a team or supervisor were better employees overall,” says Stanley.

He says those who participated also came away from the program with a stronger sense of career growth. “We get the biggest juice out of it at the midlevel,” notes Stanley. These are workers who “may have thought they have to go into management to move up. Now they realize they can move up on another track.”

Retraining and redeployment can also help experienced workers gain new skills and rekindle their passion. Harvey Nash’s Behenna has successfully retrained midlevel employees in a host of new areas. “The best success stories have been where we moved people from operational roles into project management. We even took a member of the finance team and turned him into a senior IT manager with profoundly technical responsibility,” says Behenna. “Anything is possible. You just have to know your people, keep an open mind and develop their strengths. But it’s an investment.”

Behenna also offers a range of new work environments to keep people in IT longer, and it’s not just for those approaching their golden years. He’s made arrangements such as three-day workweeks with adjusted compensation and benefits to keep valuable employees who might otherwise have burned out and left his company—and the IT field—altogether.

“We have several variations of this issue for people on the cusp of leaving, and it’s not just age-related,” says Behenna. “It’s working out well.” **CIO**

Senior Editor Stephanie Overby can be reached at soverby@cio.com.



CIO EXECUTIVE VIEWPOINT

Windows vs. Linux: Perspectives on Reliability

Ryan Gavin**Director of Platform Strategy at Microsoft**

Ryan Gavin is the director of platform strategy at Microsoft® and has been with the company for eight years, working with developers and IT professionals in a number of capacities. Ryan's primary focus is helping customers and partners evaluate IT platform investment decisions.

What are the most important factors that customers consider when choosing a server operating system?

While there are many factors that customers take into consideration, a few consistently bubble up to the top regardless of the customer's size or the importance of the workload: reliability, total cost of ownership (TCO) and security. These criteria actually encompass many attributes: for example, system reliability depends on the manageability of the platform, the skills and processes established by the IT organization, and the level of complexity of the workload, all of which impact the system's TCO. The important point here is that by basing

ability, which better reflects the system's long-term cost and benefits to the organization.

Across these real-world customer scenarios, how do Windows® and Linux compare on reliability?

Well, you should consider the specifics of the workload, as well as the IT staff skills and applications in the organization. That said, third-party research comparing both platforms provides reference points to help us better understand how Windows and Linux compare across many workloads and customer environments. There was some good work done recently by Security Innova-

"VeriTest recently concluded that Windows is 37 percent faster to update and reconfigure than Linux, which hits at the heart of a reliable platform."

their platform decisions on evaluations of system reliability, TCO and security, customers will make thoughtful, pragmatic choices that contribute to long-term IT and business success.

Reliability is often referred to as simply uptime, but you seem to define it much more broadly. How specifically do customers think about reliability?

In general, customers define a reliable platform as easy to configure and maintain, predictable (especially with evolving business requirements), and available to end users. In a lab environment, it is easy to narrowly define reliability based strictly on uptime, reboots, etc., but in real-world scenarios, customers take a richer, more comprehensive view of reli-

tions showing that Linux administrators, on average, require 69 percent more time than Windows administrators to maintain and manage their operating environment. There are a number of other studies along the same lines—for example, VeriTest recently concluded that Windows is 37 percent faster to update and reconfigure than Linux, which hits at the heart of a reliable platform.

In addition to research from analysts, customers have evaluated the platforms and drawn conclusions for themselves. The State of Illinois' director of the Department of Central Management Services, Paul Campbell, has come right out and said, "We don't have time for science projects—state government



needs trusted, tested technology that's reliable and predictable and helps us serve our constituents efficiently and cost-effectively. Our solution based on Microsoft technology is saving us \$10.5 million over five years in software costs alone."

Where can customers evaluating platforms go to get more information?

White papers, third-party research, case studies and more can be found at Microsoft's Get the Facts site, www.getthefacts.com. There, customers can access information on reliability, TCO, security, indemnification, interoperability, and performance of the Windows Server™ System vs. Linux.

For More Information:

Check out this white paper, "Reliability: Analyzing Solution Uptime as Business Needs Change," by Herbert H. Thompson, Ph.D., on behalf of Security Innovation, at www.cio.com/whitepapers/microsoft

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The CIO CSO Partnership

Where do the boundaries between IT and security begin and end? Who's responsible for what? How do you decide? When it works, the relationship between CIO and CSO can be a beautiful thing.

BY MICHAEL GOLDBERG

TriWest Healthcare Alliance counts on John Pontrelli to work effectively with his technology colleagues to provide health care to 2.8 million members of the U.S. military and their families in 21 states. As VP and CSO, Pontrelli's responsibilities cover both physical security and information security, and he

has found it imperative to form a tight working relationship with his CIO, Rick Green. Pontrelli, a corporate security expert at Microsoft and W.L. Gore before joining TriWest three years ago, spoke to *CIO* sister publication *CSO's* managing editor, Michael Goldberg, about the partnership he has formed with his CIO.

Reader ROI

- :: How IT and security can divvy up responsibilities
- :: How a good CIO-CSO relationship can improve performance
- :: Why audit is a naughty word

Michael Goldberg: In the past, you've described TriWest as being an information systems-dependent company. What does that mean?

John Pontrelli: TriWest is in 21 states, basically the left side of the United States, including Hawaii and Alaska. We have over 120 locations, and they are all connected via WAN to our corporate data center in Phoenix. Most of our sites are on military installations, so we have to coordinate with the military when we come in to set up our routing/switching equipment, as well as bringing in the phone lines. We house two or three major applications that our people hit from all the 21 states to retrieve data and to input data. We have a lot of data traversing our 21-state region at any given time; we also

push our VoIP over our wide area network. Our entire company is VoIP, and our security systems also ride over our network, so our network stays busy.

That's a good segue into the relationship you have with your CIO, Rick Green. Could you describe the nature of that relationship and, in a business like yours, what makes the relationship important?

Rick and I both started at TriWest approximately three years ago. He came in to redefine the IT—not only the infrastructure but the applications—and we had just been awarded a new bid from the Department of Defense. He had a huge challenge in front of him.

I was hired a few months after he came on board. One of the conversations

we had was around security and IT. My proposal was that information security should reside in my department, primarily to free him up to focus on connectivity, availability and support in the businesses but also because implementing all of the security requirements that the DoD had levied upon us was somewhat unmanageable. We agreed right there, from the very beginning, that that's how we were going to set it up and run it.

The other agreement we had was (and I think this is a big selling point) that I don't *audit* his environment, I *assess* it. When we are assessing the security posture of our routers, switches, databases, servers and desktops, whatever we find, we share [that information] with IT, so it's a collaborative effort. We then address any issue, whether it's a technical, procedural or a person issue. If something has bubbled up to the point where it needs Rick's attention, I meet with Rick. We meet once a month, regardless, to go over a list of things we want to talk about, but both of our doors are open to each other if we ever want to talk about technology or security. We pop in on each other all the time.

There's a lot of discussion nowadays about auditing systems and procedures. You're emphasizing assessment as a means of collaborative communication. What's the difference?

I'm a big fan of the word *assessment*; I don't like the word *audit*. It carries negative connotations; it separates; it creates an adversarial-type atmosphere even if there's a collaborative effort going on. We never use the word *audit* within security and, in reality, we're not auditing. We have vulnerability analysis tools that allow us to scan our entire environment, from the inside as well as the outside. We do this against a set of security policies that we have received from the government for a certain security posture that we need to maintain in order to hold onto our security accreditation. When we're doing these scans, IT is aware of it. They're always waiting for the results because they want to know—just as much as security wants to know if the environment, application



TriWest Healthcare Alliance
CSO John Pontrelli: "I don't
audit IT's environment;
I assess it."

or network is not meeting requirements—because they want to get it where it needs to be. We're assessing, we're collaborating, and together we maintain a very high security posture at TriWest that I think both Rick I are very proud of.

Is there a loop to close after the assessment to see that changes, fixes or improvements are carried forward? Is that handled by your group or the CIO's?

It depends upon whether it's a technical, procedural or people issue. Our scanning goes on continually (we have a set scanning schedule) so if the issue is still there when we go back and scan again we notify IT. Most times, IT tells us if they're going to be able to fix it and in what period of time. There's always reasons why things aren't where they need to be, but the good part is we all communicate very well and we're all on the same page.

From my perspective, a security perspective, and probably from Rick's perspective as well, the last thing we want to do is be surprised. It's the unknown that really keeps me awake at night.

How did you and your CIO identify the boundaries between security and IT.

The boundary conversation was part of the initial conversation Rick and I had where we agreed that it made sense for me to have information security. Some of the typical security toolsets that IT was either looking at or was using moved over to the corporate security team. Some of the more traditional security items, which can also be called IT items, we had more in-depth conversations on, such as firewall management.

For example, sometimes the firewall is viewed as a security tool and other times it's viewed as a networking or routing tool. My initial thought was perhaps security should oversee the firewall so we could validate the firewall rule set, do our assessing and make sure all the configurations were correct. The response to that was like, "Well John, what happens if someone calls you at midnight because they can't get into the network and they need you to open up a

port? Are you going to take care that?" And I said, "No, we don't have that infrastructure. We're not ready to be a 24/7 customer support for connectivity and availability." So it made sense for an item like that to stay within IT because IT is accessible 24 hours a day to help our business customers.

"I'm a big fan of the word assessment; I don't like the word audit. It carries negative connotations; it separates; it creates an adversarial-type atmosphere even if there's a collaborative effort going on." —John Pontrelli

What we do on the backside is collaborate to make sure that the security configuration, process and policy for the company is in place and being followed.

That communication must carry over into new kinds of operations that you have to implement.

It does. We recently implemented wireless. We'd been running wireless in a test environment for over a year, and we wanted to put it into production. We worked with the DoD to validate our security posture and configuration for our wireless. We had multiple meetings between security and IT, and we brought in an outside party to make sure we weren't missing anything and that the configurations were where they needed to be. Part of that process was who's going to write the policy for wireless, what kind of forms are we going to have end users fill out, who is going to oversee the configuration and who is going to monitor the intruder detection for wireless? All of those pieces needed to be discussed up front and agreed to, which we did. We implemented it, and we're happy to say that we feel very

good about our wireless implementation.

You make the point that the relationship you have with your CIO leads to both higher expectations and higher performance.

Yes. If Rick is focused on connectivity, availability and making sure that our business units are up and running, and that's his core focus, then there's a pretty high expectation set there. Conversely, the same holds true on the security side around confidentiality, integrity and all of the things we're doing around compliance and validating that our systems, applications and everything are configured and hardened to the level they need to be. Now it's very clear to the senior leadership in the company who's in charge of which area, and if there's an issue in one of those areas they know where to go. It creates a sense of accountability, a sense of clarity and, I think, a set of higher expectations.

What do you think is the most important thing for CIOs or CSOs to think about in terms of their relationship with their counterpart in security or in IT?

I think the sooner organizations can create that collaborative working relationship between the CIO and the CSO, the sooner the organization will benefit. Start that relationship and set some of the areas of responsibility and begin meeting on a regular basis. I learn so much from Rick every time I meet with him. At the same time, he knows I'm going to bring to him anything that I see securitywise. We collaborate well. It makes going to work every day very easy. **CIO**

CSO Managing Editor Michael Goldberg can be reached at mgoldberg@cxo.com.

The First (and Last) Word on Security

To keep up to date with everything that's going on in the parlous and ever-changing world of enterprise information security, read *Alarmed*, a column by Senior Editors Scott Berinato and Sarah D. Scalet (from sister publication CSO). To find it, go to www2.cio.com/research/security/alarmed.html.



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HOS

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Supply chain software has been considered too risky and important to be hosted by outsiders. That is, until you consider the risks and expense of installing and supporting it yourself.

BY MERIDITH LEVINSON

THREE YEARS AGO,

Kawasaki Motors Corp. USA had some unhappy dealers on its hands. The \$1.5 billion manufacturer of motorcycles, ATVs and water scooters couldn't get the products into showrooms when the dealers wanted them—for example, water scooter deliveries promised in early spring arrived too early, when the snow was still falling. As a result, Kawasaki had to offer discounts and rebates to drive sales in the off-season, which ate into the company's margins, according to Roger Peterson, Kawasaki's vice president of information systems.

The reason Kawasaki couldn't get the right products to its dealers at the right time was because, like many small and midsize companies, it lacked the technology for precise collaboration and exchange of demand forecasts with its parent company, Kawasaki Heavy Industries, which manufactures the products that Kawasaki distributes to its dealers. The cost of developing and maintaining tradi-

Reader ROI

- :: How the security of hosted software has improved
- :: Why the hosted model may be the only option for midsize IT shops
- :: What considerations are important in the decision to buy



tional supply chain applications is too high for Kawasaki, which spends just over \$10 million a year on business applications and IT infrastructure. Peterson estimates that deploying similar software in-house would have cost several million dollars and several years of effort. So in early 2004, Peterson began looking at hosted supply chain collaboration applications that ran on the vendor's computers and that his company could access over the Internet, through a Web browser.

Early Risk

While so-called hosted or on-demand software was making waves in the CRM space at the time, it was nearly unheard of in supply chain offerings. Beth Enslow, Aberdeen Group's senior vice president of enterprise research who authored a study this spring on hosted supply chain applications, says concerns about data getting lost or stolen and system reliability prevented companies from entrusting their mission-critical supply chain activities to third parties.

Peterson of course considered the issue of security and reliability of the hosted systems he was evaluating. "I had to wrestle with the concern about putting our supply chain application out with a third party over the

Internet. That's our family jewels," he says.

But Peterson had another, larger concern: Kawasaki's three main competitors—Honda, Harley-Davidson and Yamaha—which are respectively two and a half (Honda and Harley) and one and a half times larger than Kawasaki—all have much more sophisticated supply chain software infrastructures. "We're not one of the big dogs. We're one of the smaller players. We're competing with people who have more resources, more people, more dollars than we do, yet we have all the same problems," he says. So Peterson decided to take a gamble on a hosted collaborative supply chain planning application from Mitrix, which his company deployed in June.

Today, a Viable Solution

Evaluating hosted supply chain management software—whether for collaborative planning, forecasting or transportation management—is much less of a hand-wringing experience for CIOs today than it was a few years ago due to the business model evolving and advances in technology. Analysts say the do-or-die concerns about security have largely dissipated because vendors have beefed up their firewalls, intrusion detection systems and encryption techniques. "Security is a baseline requirement," says Bill McNee, founder and CEO of Saugatuck Technology. "Whereas that was more of a concern two to three years ago, virtually all software-as-a-service players have overcome that." Consequently, companies large and small are increasingly using hosted software to automate and run core business activities such as supply chain management.

The same factors that drove companies to embrace hosted CRM—easier and speedier implementations, faster time to benefits and knowing you'll always be on the most current version of the application since the vendor is responsible for upgrades—are pushing them to adopt hosted software for such aspects of supply chain management as forecasting, collaborative planning, inventory visibility and transportation management.

Still, the hosting option should not be considered lightly, especially if you're thinking about using it for something as

critical as your supply chain. Though the security situation has improved, CIOs still need to vet the vendors for proper security procedures and monitor their adherence to them. And the issues of software reliability and integration that can make or break an in-house implementation are no less important when the software is hosted by an outsider. In fact, those concerns about security, reliability and ease of integration are even more acute in the supply chain world where more parties need to connect.

Read on for examples of how two companies weighed those various considerations.

CONSIDERATION 1: Security

At a time when hacking is the new favorite pastime of teenagers, companies have legitimate fears about keeping their data in a hosted software vendor's systems, because they have no direct control over those systems. Past positive experience using an application service provider helped Kawasaki's Peterson overcome his concerns about his company sharing its production plans with its manufacturing parent company through a third-party over the Internet. He says his previous experience using an ASP, which forced him to bone up on SSL protocol, public-key infrastructure and two-factor authentication, helped him determine whether Mitrix's security infrastructure and policies would be adequate. Also, knowing the information his company would be sharing would be limited to a discrete time horizon (no more than a 12-month forward projection of its production plans) mitigated his concerns about the safety of his company's data. In the event there was a breach, his company's risk would be lower than if it used the hosted supply chain collaboration application for all of its plans (which go as far as 36 months out).

CONSIDERATION 2: Reliability

The reliability of hosted software providers' systems is debatable. Aberdeen Group's Enslow says current users of hosted sup-

ply chain software that she's interviewed say it's just as secure and just as reliable—if not more reliable—than their internal systems. And Mark Koenig, VP at Saugatuck Technology, says there's no guarantee that an enterprise customer will be any better at running an application internally than a third party “whose business it is [to run that application] and who's invested heavily in being available 24 by 7 by 365.”

That may be true, but the service outages that Salesforce.com customers experienced in late 2005 and early 2006 renewed the focus on reliability, which was a primary concern for Paul Rizzo, PepsiAmericas' director of logistics, when he deployed a transportation management system from LeanLogistics in 2002. To quell his worries, his company's IT and supply chain groups piloted the system to make sure it provided the functionality and reliability he was expecting, and that it integrated well with other systems inside Pepsi. The IT group also discussed with LeanLogistics

the number of transactions its transportation management system could handle and wrote financial penalties into service-level agreements in the event of system downtime. That's a good thing because he has experienced outages. Fortunately, he says, the outages are few and far between (he says he can count the number on one hand), and the one that lasted the longest was only a few hours, which hardly crippled his organization.

CONSIDERATION 3: Integration

Integration is never a picnic, whether you're deploying software in-house or using hosted software. But the idea of linking your internal systems with a hosted system and then needing external business partners to tie in to that system can seem particularly mind-boggling for some potential users of hosted supply chain software. That wasn't the case for Peterson, however. Integrating his ERP

system with Mitrix's hosted supply chain collaboration system was less of a concern for him for two related reasons. First, in the 1980s he created a metadata repository that identifies all of the relationships between Kawasaki's data structures, programs, and jobs for online and batch programs. His IT staff uses this data repository when analyzing which applications will need to be modified as a result of any integration or enhancement effort. Once they've determined the interface points between a new application and existing applications, they use the data repository to identify all the existing data structures and processes that may require changes to integrate with a new system. Peterson knew he could rely on this resource to help the integration proceed more smoothly. Second, having been through a complicated integration project in 1999 that involved hooking up his company's back-end mainframe systems to a new front-end e-commerce system, he knew his staff was up to the task of linking

Living Large

Hosted supply chain software can let mid-market companies act like—and meet the demands from—big companies. But there are risks.

CIO: What challenges do mid-market companies face with respect to managing their supply chains?

Aberdeen Group SVP

Beth Enslow: Mid-mar-

ket companies have to meet very demanding requirements from larger customers. These larger companies have very specific mandates on how they want their orders fulfilled, how they want them packed and shipped, and what kind of information they want about those orders and their status.

One of the challenges mid-market companies face then is that most of them don't have the IT infrastructure to do this in an efficient manner.

They end up having to throw lots of people at the problem.

What technologies can help mid-market companies work with their supply chain partners?

They need a platform to exchange information electronically, whether forecasts, order information or status information, and they need

to have good visibility into what's happening with specific orders. If you have information electronically, not only are you reducing the human cost involved in sharing information, but you can now collaborate at a deeper level because you're able to share a wider degree of information. Sharing information electronically helps reduce errors and perhaps most importantly helps cut lead times so that you can deliver goods more flexibly and faster

to the end customer. We see mid-market companies becoming more interested in on-demand supply chain management applications because they present a less expensive and less disruptive way for them to access this technology.

What do you mean by less disruptive?

Mid-market companies simply don't have the bodies available to go through a traditional software evaluation and implementation pro-

cess and then keep that system up to date. With on-demand software, a lot of that [implementation] work is now done by the vendor, which minimizes disruptions to the IT staff. For mid-market companies, on-demand has proven to be a faster way to get solutions up and running, the ROI is faster, and you won't find yourself three or four versions behind and not having access to the newest functionality, because the vendor takes care of that for you.

—M.L.



CIO EXECUTIVE VIEWPOINT

eBilling means eBusiness

Mike Seashols
Chairman of Avolent

The current business imperative is to deploy operations that place the customer at the center of all interactions. The emphasis clearly shifts to how friendly and efficient processes are from the customers' viewpoint. Interactive, self-service electronic billing and payment applications address one of the greatest opportunities for reshaping a fundamental customer interaction, turning the invoice-to-pay process into a customer service asset. Avolent is the leader in providing applications that enable organizations to make this transition.

What are electronic billing and payment, and why are they so important to business?

The two most influential business transformations happening today are the shift to an **electronic business** (eBusiness) vs. paper-based model, and the need to alter your business perspective to a **customer-centric** model. Electronic billing and payment mean evolving away from paper bills and checks – and the related customer service phone calls and interactions associated with them – to a convenient online application that customers can use to complete any number of transactions, according to their own timetable. It's important because eBilling and ePayment comprise the "last mile" of your company's interaction with your customers. A comprehensive customer-centric eBilling approach creates substantial, real value.

to make payments online and receive their invoices via e-mail. Likewise, there is a substantial "push" effect caused by the need for organizations to add value to their web portals, reduce costs and improve their intimacy with their customers by offering eBilling. Moreover, many companies find considerable value from offering eDisputes or self-service settlement of disputes, since several industries experience dispute interactions that are as high as 30 percent of their initial billings.

What is the core value proposition of eBilling and ePayment?

Very few initiatives can deliver the kind of value that businesses reap from interactive electronic billing and payment. The savings from operational improvements, such as reduced paper expense and simplified processes that result in

"The savings from operational improvements, such as reduced paper expense and simplified processes that result in decreases in staffing, often generate a payback within 12 months."

Why is the time right for eBilling?

The momentum for eBusiness has been accelerating steadily, with most organizations having spent the past few years launching their web portals. Now they seek more value and leverage from their eBusiness investments. Customers, as well, have been investing in their own electronic processing applications, with ePayments being a widespread initial choice. This is creating a customer-driven "pull" effect as customers seek the ability

decreases in staffing, often generate a payback within 12 months. Tack on the benefits of accelerated cash flow, increased revenues and enhanced business compliance, and it's no wonder customers such as Office Depot proclaim eBilling one of their top ROI projects for the year. Companies improve the level of customer service and conveniences they provide, and in doing so they gain an important advantage in acquiring and retaining customers in today's self-service economy.


How is Avolent's solution different from other types of electronic billing?

When most organizations designed their eBusiness and web portal strategy, their initial eBilling and ePayment implementation was typically based on delivering an electronic version of their paper bill as a PDF document. While that strategy has served a purpose in helping to lower operations costs, it has not met a core customer requirement, namely the ability to receive, process, analyze, dispute if necessary, and pay on their own terms, with their own processes and on their own schedule. That is exactly what Avolent enables: a truly self-service, interactive environment in a convenient, always-available application.

For More Information:
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At PepsiAmericas, Rizzo says integrating his company's existing inventory management and deployment systems with LeanLogistics' transportation management

and what product you actually build," he says. "You can always make an argument that a custom solution will let you differentiate yourself more from a competitive standpoint, but I think it's more important

Data access was critical for Rizzo, who contracted with LeanLogistics while the transportation management software provider was still a relative newcomer. Rizzo wasn't so much worried about Sarbanes-Oxley, which wasn't yet law when he implemented, as he was concerned about LeanLogistics' longevity. Since his company's contracted rates with its 50 transportation providers are stored in LeanLogistics' transportation management system, he didn't want to have to recreate from scratch all of those nuanced contracts if LeanLogistics went under, so he made sure he'd be able to get that information in a flat file from LeanLogistics by writing it into PepsiAmericas' contract with the vendor.

“ I HAD TO WRESTLE WITH THE CONCERN about putting our supply chain application out with a third party over the Internet. That's our family jewels.”

—Roger Peterson, VP of IS, Kawasaki Motors Corp. USA

system required just 40 hours of two of his company's IT workers. "I've done a lot of systems implementations in my career. This was by far and away the easiest one we ever did," says Rizzo. "We flipped the switch, the integration worked flawlessly, and we never looked back." Had PepsiAmericas built its own transportation management system in-house, its IT staffers would have had to connect all 50 of its carriers to the system on their own.

CONSIDERATION 4: Customization

If you have any desire to customize a supply chain application, you should forget about using a hosted provider. Customization defeats the purpose of an on-demand solution, which is designed to be one-size-fits-all in order to provide the vendor with the economies of scale it needs to keep its costs low and make upgrades easy. "Hosted solutions are built to be very configurable, so you can have your own role-based views and flexible user interface, but if you're looking to do hard-core customization of an application, they aren't a good fit," says Enslow.

Hosted collaborative supply chain planning software suited Kawasaki because it reduces the development time and minimizes the need for customization. He didn't see the point of customizing what he perceives as an infrastructure solution. "So much of the supply chain is really just plumbing. It doesn't have any effect on what you decide the market is really demanding

to have your design engineers coming up with innovative product designs to differentiate yourself as opposed to tweaking your application infrastructure."

CONSIDERATION 5: Compliance and Data Access

In the post Sarbanes-Oxley world, a company's ability to certify the integrity of its financial systems and the data contained in them is of paramount importance (if you don't want anyone to go to jail, that is). Because you don't own the software you're using, executives see the hosted model as a risky proposition because they have little control over the process and timing of upgrades, and keeping documentation up to date is more difficult. Saugatuck's Koenig says chief compliance officers are particularly wary of hosted software because they're the ones who are on the hook for the integrity of the systems used by their company, regardless of who is supplying those systems.

So if you're using hosted software, you have to make sure your vendor can vouch for the integrity of its systems because if your company or your vendor comes under attack by the Securities and Exchange Commission, there's going to be a lot of finger-pointing, and you need to do your due diligence before that happens. Ensure ahead of time that you can get access to your data in the event you need to for legal reasons or if your vendor goes belly up.

So Far, So Good

Aside from a few outages, only good things have come from PepsiAmericas' partnership with LeanLogistics. Rizzo says his company has saved money on staffing in its accounts payable department because the transportation management system also pays invoices automatically, electronically. He says dispatchers are more productive because the system relieves them of mundane tasks like identifying which transportation provider can bring a truckload of Pepsi cans to a particular warehouse on a particular day. The hosted system has reduced such "nonvalue added" work by as much as 15 percent, he says.

As for the business benefits Kawasaki is seeing from using Mitrix's hosted supply chain collaboration application, Peterson says, it's too early to tell (at the time this story was reported, Kawasaki had just started deploying the software), but he's hopeful that next spring the water scooters won't start arriving until after the snow has stopped. **CIO**

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Hosting Goes Mainstream

To read highlights from Aberdeen Group's 2006 survey, **THE ON-DEMAND TIPPING POINT IN SUPPLY CHAIN**, go online to www.cio.com/090106.

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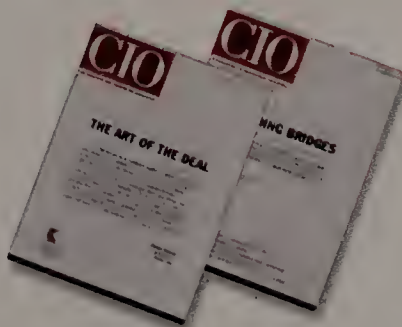
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Business Offices: CXO Media Inc., 492 Old Connecticut Path, P.O. Box 9208, Framingham, MA 01701-9208, 508 872-0080.

CIO (ISSN 0894-9301) is published semimonthly and as a combined issue Dec. 15/Jan. 1 by CXO Media Inc. Periodicals postage paid at Framingham, MA, and at additional mailing offices. Canada Publications Mail Agreement Number 1902075. CANADIAN POSTMASTER: Please return undeliverable copy to P.O. Box 1632, Windsor, ON N9A 7C9.

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And the Winner Is...

Recognizing the small victories that make it all worthwhile

ACTORS HARDLY LACK for opportunities to win awards. Stagger in front of a camera and you're immediately eligible for everything from the Oscars to the Pensacola Film Critics Circle Silver Pelicans. For IT folk, however, tuxedo season begins and ends with the CIO 100 Awards, which were handed out late last month.

But since one's credenza can never boast too much Lucite, here's a list of awards that laborers in the field of IT deserve but no one—until now—has thought to dole out.

Best Help Desk Response to an Executive with Anger Management Issues

WINNER: Charlene Mellowhead, Support Specialist, Faversham & Faversham Consulting

"Dear Bob: I'm putting a Xanax in the interoffice mail right now. Call me back when it kicks in."

Best Excuse for Missing a Vendor Meeting

WINNER: Josh Budgetson, CIO, North, East and West Freight Lines

"I was in with the CEO reviewing our plan to cut our IT spend by 80 percent next year. But let's re-sked and we can talk about your new pricing structure then."

The Ethan Hunt

"Mission: Impossible" Award

WINNER: Jennifer Nerveless, Network Support Specialist, Burger Kingdom
For successfully identifying and yanking from a tangle of 268 unlabeled

cables the dark green Ethernet link connected to the dead server—and not the lime green one supporting the whole company's VOIP service.

Most Trouble-Free RFID Implementation

WINNER: Snazzy Packaged Goods

"We used a phenomenal new technology called printed bar codes for tracking purposes," says RFID team leader, Maria Practicali. "They're 1/100 the price of RFID tags, and much more reliable."

Fastest Response to an Emergency Page on Saturday Night at 11:44 p.m.

WINNER: Nick Insomniotis, SysAdmin, Alliance Power Systems (18 seconds)

"The trick is never leaving the office," says Insomniotis. "My futon fits perfectly on the floor of the telecom closet."

Best E-Mailed Outage Alert

WINNER: Eric Middleman, Network Manager, Money Pit Financial Advisors

"Web access will be unavailable from 9:30 a.m. to 10:30 a.m. for a firewall upgrade. Here's a crazy idea: What if you stopped surfing Gawker and CBS SportsLine and tried doing some actual work?"

Slickest Project Management Spin

WINNER: Fred Silvertonsils, Worldwide Global Express Shipping & Logistics

After blowing by three deadlines for launching a new online customer service module, he redefined those deadlines as "Pre-Alpha Internal Test



Period," "Feedback Gathering" and "Feedback Assimilation." Beta launch is now slated for September 2007.

Best Performance at a Panel Discussion

WINNER: Shelly Shrewdski, CIO, Our House Mortgage Lenders

Sitting between EVPs from SAP and Microsoft, Shrewdski said that "proprietary software is the dinosaur trapped in the open source tar pit." (Shrewdski, coincidentally, is in the midst of contract negotiations with both SAP and Microsoft.)

Coollest Use of a BlackBerry During a Cocktail Party

No winners in this category this year. To all those who entered, better luck in 2007.



COBIT

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Successful organizations understand the benefits of information technology (IT) and use this knowledge to drive their shareholders' value. They recognize the critical dependence of many business processes on IT, the need to comply with increasing regulatory compliance demands and the benefits of managing risk effectively. To aid organizations in successfully meeting today's business challenges, the IT Governance Institute® (ITGI) has published version 4.0 of *Control Objectives for Information and related Technology (COBIT®)*.

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Additional information about COBIT 4.0 is available at www.isaca.org/cobit.

The publication can be downloaded for no charge on the web site. COBIT 4.0 can also be purchased at www.isaca.org/bookstore, along with other valuable COBIT products.

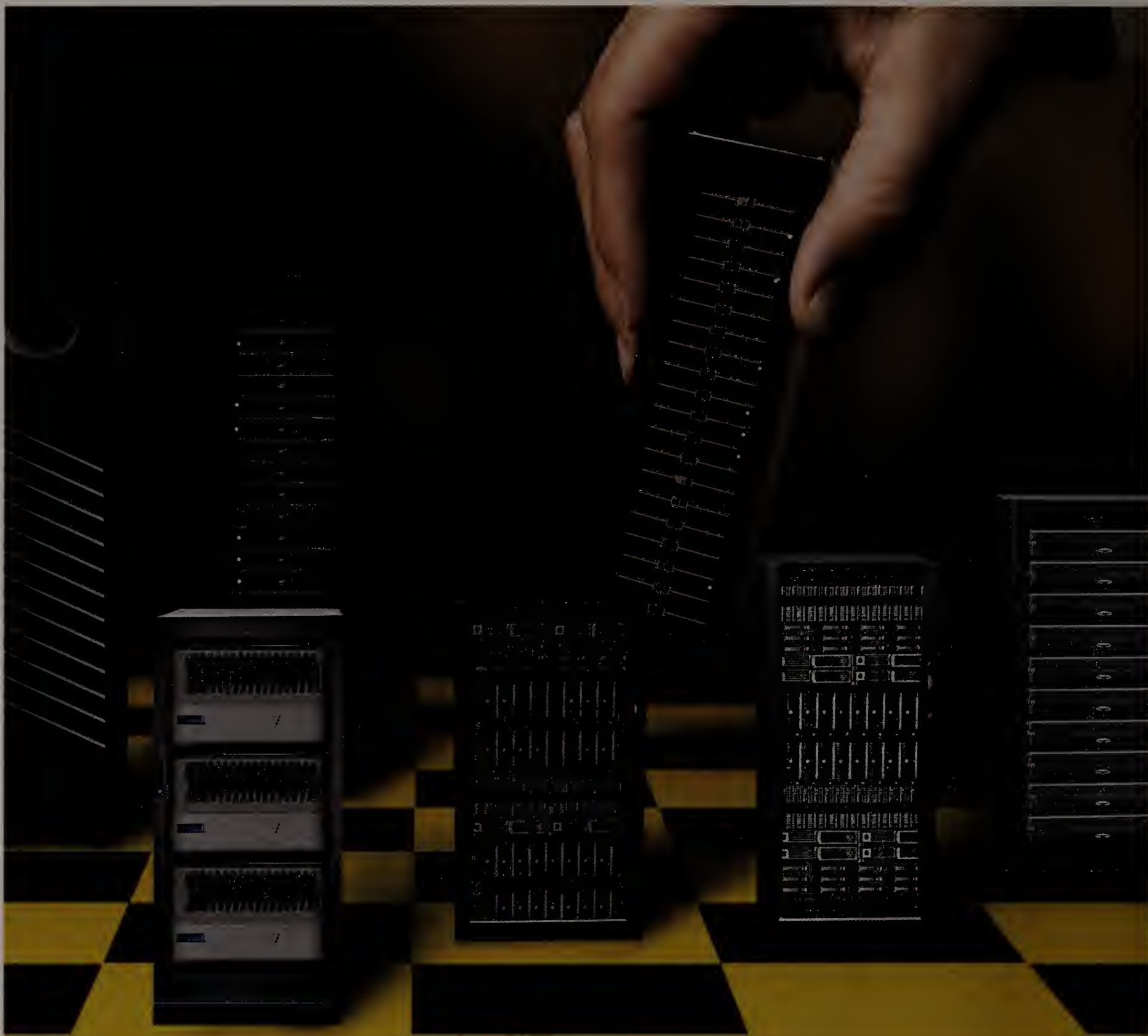
A complete version of the COBIT 4.0 framework card that includes the overall framework, goals and processes tables, mapping chart and COBIT product diagram/descriptions is available. To obtain your free copy of the COBIT 4.0 laminated card, simply complete the form located at www.isaca.org/cobitcard.

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